FINAL
ENVIRONMENTAL ASSESSMENT

FOR

PROPOSED CONSTRUCTION II

BUCKLEY AIR FORCE BASE, COLORADO

Prepared by

Headquarters Air Force Center for Environmental Excellence

Project Execution Division

June 2004

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FINDING OF NO SIGNIFICANT IMPACT (FONSI)
PROPOSED CONSTRUCTION II PROJECTS

BUCKLEY AIR FORCE BASE (AFB), COLORADO

AGENCY: United States Air Force (USAF), 460th Air Base Wing

BACKGROUND: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended, Council on Environmental Quality NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force NEPA implementing regulations (32 CFR 989), the USAF conducted an assessment of the potential consequences of implementing Proposed Construction II construction and demolition projects that are described below in the proposed action.

PROPOSED ACTION: The USAF proposes the Proposed Construction II projects at Buckley AFB. Within the Proposed Construction II projects, seven new construction and eight demolition projects encompassing approximately 32.41 and 0.96 acres of land, respectively, at various locations within the AFB boundaries. The Proposed Construction II projects would include construction of various buildings and facilities, including a new leadership development center, child development center, athletic fields, new munitions and hazardous materials gate, new visitors center, chapel and clinic. Demolition projects would include destruction of Buildings 19, 40, 41, 902, 1620, 1632, 1631 and area concrete foundations in the old Marine compound.

FACTORS CONSIDERED IN DETERMINING THAT NO ENVIRONMENTAL IMPACT STATEMENT IS REQUIRED: The Environmental Assessment (EA) analyzed the environmental impacts of alternatives to the proposed action taking into account all relevant environmental resource areas and conditions. The USAF has examined the following resource areas and conditions and found that the proposed action will either have no or inconsequential impact: air quality; biological resources; geology, soils and topography; hazardous materials; hazardous waste; land use and aesthetics; socioeconomic and environmental justice; utilities; traffic; noise; radon; lead-based paint; polychlorinated byphenyls; asbestos; and water resources. Portions of the area of the Proposed Construction II projects that will not be disturbed by construction do contain subsurface contamination. While the proposed action would not have any significant effect to contaminated sites, if remedial action were required at these sites in the future, activities or occupation associated with individual Proposed Construction II projects could be discontinued or limited. The Final EA for the Proposed Construction II projects at Buckley AFB, Colorado, dated June 2004, is incorporated by reference.

PUBLIC NOTICE: NEPA, 40 CFR 1500-1508, and 32 CFR 989 require public review of the EA before approval of the FONSI and implementation of the Proposed Action. The public review period ended on 7 April 2004.

FINDING OF NO SIGNIFICANT IMPACT: Based on the requirements of NEPA, 40 CFR 1500-1508, and 32 CFR 989, I conclude the environmental effects of the proposed action are not significant and, therefore, an environmental impact statement will not be prepared. A notice of availability for public review was published in the Denver Post on 7 March 2004 indicating a 30-day review period. A hard copy of the Draft EA and Draft FONSI was placed in the Denver and Aurora public libraries for dissemination. The signing of this FONSI completes the USAF Environmental Impact Analysis Process.

ALLEN KIRKMAN, JR., Colonel, USAF
Commander

4 August 2004
Date

COVER SHEET
ENVIRONMENTAL ASSESSMENT
FOR PROPOSED CONSTRUCTION II PROJECTS
AT BUCKLEY AIR FORCE BASE (AFB), COLORADO

Prepared by
Headquarters Air Force Center for Environmental Excellence
Project Execution Division
Brooks Air Force Base, Texas 78235-5122

a. **Responsible Agency**: U.S. Air Force, 460th Air Base Wing

b. **Proposed Action**: The proposed action analyzed in the Proposed Construction II Projects environmental assessment (EA) is to support and sustain the realignment of Buckley Air National Guard Base to Buckley AFB.

c. **Inquiries regarding this document should be directed to**: Elise Sherva, 460 CES/CEVP, 660 S. Aspen Street (Stop 86), Bldg. 1005, Room 254, Buckley AFB, Colorado 80011-9551; telephone (303) 677-9077; e-mail elise.sherva@buckley.af.mil.

d. **Privacy Advisory:** Your written or oral inquiries may be published and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment portion of any public meeting or hearings or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the name of individuals making comments and specific comments and specific comments will be disclosed. Personal home addresses and phone numbers have not been published in the Final EA.

e. **Designation**: Final Environmental Assessment (EA)

f. **Abstract**: The United States Air Force (USAF) has prepared this EA to evaluate the potential environmental impacts from the Proposed Construction II Projects (including seven construction and eight demolition projects) at Buckley Air Force Base (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The proposed Construction II Projects are required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

The environmental resources potentially affected by the proposed action and alternatives include: air quality; biological resources; geology, soils and topography; hazardous materials; hazardous waste; land use and aesthetics; socioeconomics and environmental justice; utilities; traffic; noise; radon; lead-based paint; polychlorinated byphenyls; asbestos; and water resources. Portions of the area of the Proposed Construction II projects that will not be disturbed by construction do contain subsurface contamination. Based on the nature of the activities that would occur during the construction and operation of the Proposed Construction II Projects, the U.S. Air Force has determined that minimal or no adverse impacts to the above resources are anticipated.

g. **A 30-day public comment period ending April 7, 2004 was provided.** Comments were received from the following agencies:

- The Colorado Department of Public Heath and Environment (CDPHE)
- The Colorado Department of Transportation (CDOT)
- The Colorado Department of Wildlife (CDOW)
- The City of Aurora

The comments are contained in Appendix G of the EA. The comments submitted by the CDOW provided concurrence with the EA. Comments submitted by the CDPHE, CDOT and the City of Aurora required responses. The response letters, which document the revisions made to the EA resulting from the comments, are also included in Appendix G of the EA.

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ACRONYMS AND ABBREVIATIONS

ABW	Air Base Wing
ACM	Asbestos Containing Materials
ADAL	Addition/Alteration
AF	Air Force
AFB	Air Force Base
AFI	Air Force Instruction
AICUZ	Air Installation Compatible Use Zone Study
APEN	Air Pollution Emission Notice
AQCR	Air Quality Control Region
AST	aboveground storage tank
BANGB	Buckley Air National Guard Base
BEA	Bureau of Economic Analysis
BMPs	best management practice
BX	Base Exchange
CAA	Clean Air Act
CAQCC	Colorado Air Quality Control Commission
CCR	Colorado Code of Regulations
CDOW	Colorado Department of Wildlife
CDOT	Colorado Department of Transportation
CDPHE	Colorado Department of Public Health and the Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CES/CEV	Civil Engineer Squadron/Environmental Flight
CFR	Code of Federal Regulations
CMU	concrete masonry unit
CNHP	Colorado Natural Heritage Program
CO	carbon monoxide
CONETSCA	Colorado Nongame, Endangered, or Threatened Species Conservation Act

COANG	Colorado Air National Guard
dB	decibels
DOD	Department of Defense
DoT	U.S. Department of Transportation
DNL	Day-Night Sound Level
E-470	E-470 Toll Highway
EA	Environmental Assessment
EPCRA	Emergency Planning and Community Right-To-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act of 1973
^{o}F	degrees Fahrenheit
FIP	Federal Implementation Plan
FONSI	Finding of No Significant Impact
ft	feet or foot
ft^2	square foot
ft^3	cubic foot
FY	Fiscal Year (1 October through 30 September annually; for example FY04 represents 1 October 2003 through 30 September 2004)
HVAC	heating, ventilating and air conditioning
HWMP	Hazardous Waste Management Plan
IERP	Integrated Environmental Response Plan
kV	kilovolt
kWh	kilowatt-hour
LAER	Lowest Achievable Emissions Rate
LBP	lead-based paint
mg/l	milligrams per liter
mgd	million gallons per day
mmBTU/hr	million British Thermal Units per hour
$mmft^3$	million cubic feet
NAAQS	National Ambient Air Quality Standards

NANSR	Non-attainment area New Source Review
NEPA	National Environmental Policy Act
NESHAP	National Emissions Standards for Hazardous Air Pollutants
NMRC	Navy and Marines Reserve Center
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NOI	Notice of Intent
NO_x	nitrogen oxides
ODS	ozone depleting substances
OSHA	Occupational Safety and Health Association
pCi/L	picocuries per liter
Pb	lead
PCBs	Polychlorinated Byphenyls
PM_{10}	particulate matter less than 10 microns in size
ppm	parts per million
PSD	Prevention of Significant Deterioration
RCRA	Resource Conservation and Recovery Act
ROI	Region of Influence
SIP	State Implementation Plan
SO_2	sulfur dioxide
SO_X	sulfur oxides
SPCC	Spill Prevention Control and Countermeasure
SWPPP	stormwater pollution prevention plan
tpy	tons per year
TCLP	Toxicity Characteristic Leaching Procedure
TSCA	Toxic Substances Control Act
TSDF	treatment storage and disposal facilities
TSP	total suspended particulates
$\mu g/m^3$	micrograms per cubic meter of air
USAF	United States Air Force

U.S.C.	United States Code
USCB	United States Census Bureau
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
UST	underground storage tank
UV	ultraviolet
VOCs	volatile organic compounds
Xcel	Xcel Energy of Colorado

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SECTION 1

PURPOSE AND NEED FOR THE PROPOSED ACTION

This environmental assessment (EA) analyzes the potential environmental impacts associated with Fiscal Year (FY) 2004 (04) and 2005 (05) construction and demolition projects at Buckley Air Force Base (AFB), Colorado. Table 1.1 lists the construction and demolition projects, and associated FY for which they are scheduled.

Table 1.1 Proposed Construction II Projects

Project	Scheduled Year
1. Construct Athletic Fields	2005
2. Construct Chapel	2005
3. Construct Child Development Center	2005
4. Addition/Alteration to Clinic	2005
5. Construct Leadership Development Center	2006
6. Construct Munitions and Hazardous Materials Entrance Gate	
7. Construct New Visitors Center	2005
8. Demolish Building 19 (Camana Club)	2005
9. Demolish Building 40 (North Gate Visitors Center)	2004
10. Demolish Building 41 (North Gate Guard House)	2004
11. Demolish Building 902 (Old Base Exchange)	2005
12. Demolish Building 1620 (Radar Relay Building)	2005
13. Demolish Building 1631 (Electrical Shop)	2005
14. Demolish Building 1632 (Reserve Force Building)	2005
15. Demolish Marine Compound Concrete Foundations	2005

This document has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended, the NEPA implementing regulations (40 Code of Federal Regulations [CFR] Parts 1500-1508), and Air Force NEPA implementing regulations (32 CFR 989).

1.1 PURPOSE AND NEED

As shown in Table 1.1, the 460th Air Base Wing (ABW) and tenant organizations propose seven construction and eight demolition projects (hereafter called Proposed Construction II) at Buckley AFB. In October 2000, Buckley Air National Guard Base (BANGB) was designated as an active duty AFB. The purpose of these projects is to

support and sustain the realignment of BANGB to Buckley AFB. The Proposed Construction II projects would support the 460th ABW mission and improve quality of life for on-site, off-site, and retired personnel.

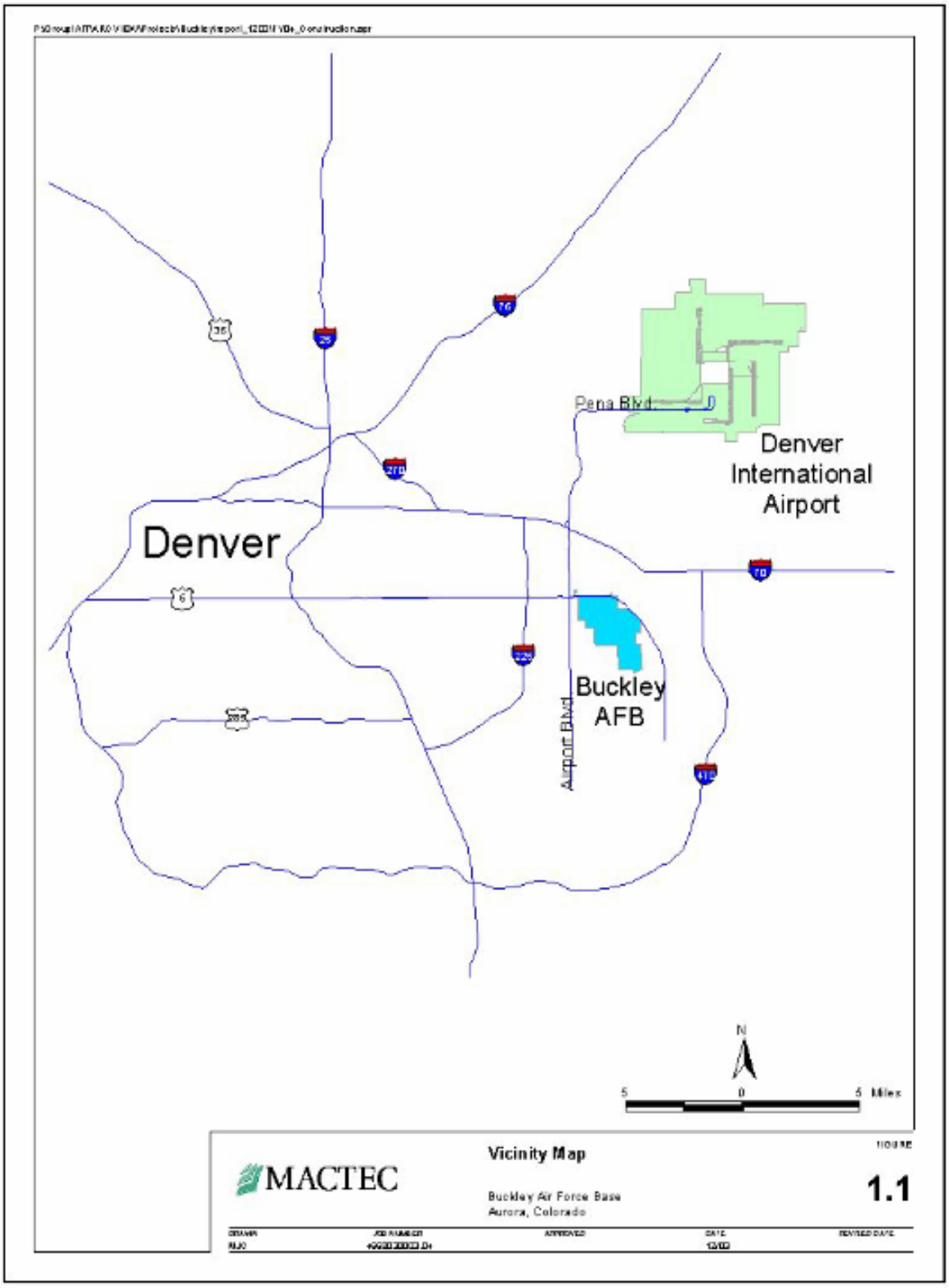
This EA provides Buckley AFB with the information required to understand the potential environmental consequences of the Proposed Construction II projects and support a Finding of No Significant Impact (FONSI) or a decision to prepare an Environmental Impact Statement. The EA, however, does not constitute approval for the Proposed Action.

1.2 LOCATION AND DESCRIPTION OF BUCKLEY AIR FORCE BASE

Buckley AFB is located on the northeast side of the city of Aurora in Arapahoe County, Colorado. The general location is shown in Figure 1.1, Buckley AFB Vicinity Map. The Proposed Action includes a total of approximately 31 acres within the 3,283-acre base. Figure 1.2 shows the locations of the Proposed Construction II projects.

460th ABW is the current host for Buckley AFB. The mission of the 460th ABW is to provide combat capability through superior services to air and space, Department of Defense (DOD) missions and expeditionary forces. The Military Active Duty population of Buckley AFB is 3,600 (this number does not include Buckley Annex personnel), however the total ABW and tenant installation population is 8,950 (Buckley AFB 2003a).

Buckley AFB hosts many civilian and DOD tenant organizations, including, but not limited to the following: Defense Contract Manager, Defense Finance and Accounting Service, Military Entrance Processing Station, 2nd and 8th Space Warning Squadrons, 566th Information Operations Squadron, Detachment 4 - Air Force Operational Testing and Evaluations Center, Detachment 801 - Air Force Office of Special Investigations, Detachment 45 - Air Force Technical Applications Center, Air Force Accounting and Finance Office, Air Force Auditing Agency, Air Force Conservation Agency, Air Force Institute of Technology, Air Force Reserve Personnel Center, Naval Reserve Recruiting Command, U.S. Army Recruiting Battalion, Colorado Air National Guard (140th Wing),


Pena Blvd
Denver International Airport
Denver
Buckley AFB
Airport Blvd
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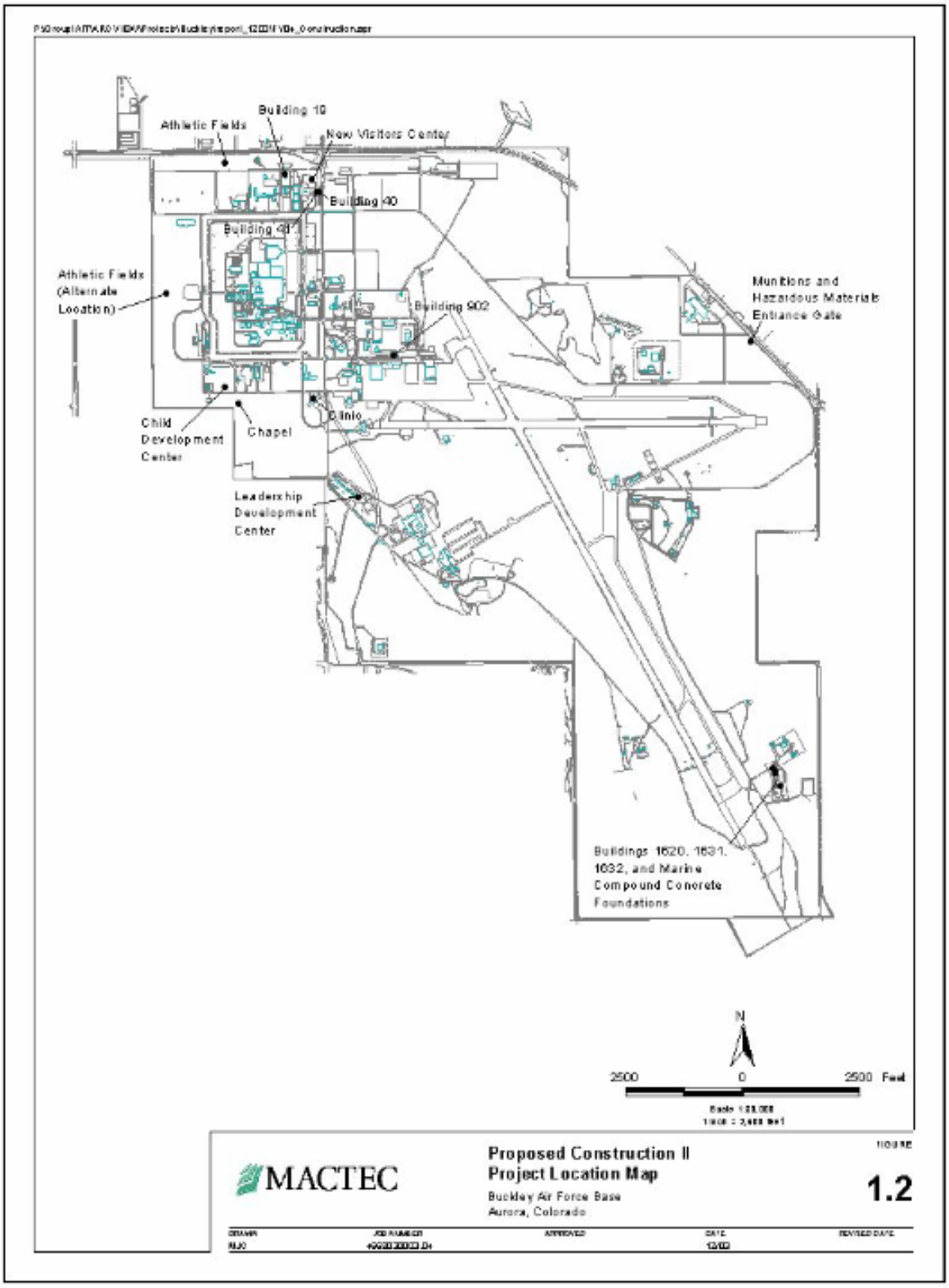
MACTEC
Vicinity Map
Buckley Air Force Base
Aurora, Colorado
1.1


Athletic Fields
Building 10
New Visitors Center
Building 40
Building 42
Athletic Fields (Alternate Location)
Building 902
Munitions and Hazardous Materials Entrance Gate
Child Development Center
Chapel
Clinic
Leadership Development Center
Buildings 1620, 1631, 1632, and Marine Compound Concrete Foundations
N
2500
0
2500 Feet
MACTEC
Proposed Construction II
Project Location Map
Buckley Air Force Base
Aurora, Colorado
1.2

Colorado Army National Guard, Aerospace Data Facility, Navy/Marine Corps Reserve Center, Battery A – 1st Battalion [14th Marines], Marine Air Control Squadron, Army/Air Force Exchange Service, Combined Task Force, Civil Air Patrol, and Defense Commissary Agency.

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

This EA encompasses the construction of seven buildings and the demolition of seven buildings and area concrete foundations in the old Marine compound. All construction and Building 19, 40, 41, and 902 destruction projects are located primarily in the northern half of the installation within the boundaries of Buckley AFB. Buildings 1620, 1631 and 1632, and the area concrete foundations in the old Marine compound, which are scheduled for demolition, are located in the southeast quadrant of the installation. A new Munitions and Hazardous Materials Entrance Gate is proposed and would be located along 6th Avenue, east of the existing North Gate. Proposed Construction II project locations are shown in Figure 1.2. A majority of the projects are located near the installation boundary and border directly on private or non-federal properties. Individual construction and demolition projects are described in Section 2.

Although the area of direct impact is confined within the boundary of Buckley AFB and would primarily be confined within the areas associated with each Proposed Construction II project, certain environmental consequences could extend beyond the base boundaries, particularly those associated with resources susceptible to cumulative impacts.

Site-specific impacts will be fully analyzed in relation to potentially affected environmental resources in Section 4, Environmental Consequences. The region of influence and associated significance threshold for each potentially affected environmental resource are delineated in Section 3, Affected Environment, and Section 4, Environmental Consequences.

1.4 ORGANIZATION OF THE EA

This EA is divided into seven sections. Section 1 describes the purpose and need for the Proposed Action. Section 2 describes the Proposed Action, the Alternative Action 1, and No Action Alternative. Section 3 describes the affected environment and scope of environmental review. Section 4 presents the environmental consequences of the Proposed Action, Alternative Action 1, and the No Action Alternative. Section 5 presents the list of preparers, and Section 6 presents a list of agencies, organizations, and persons to whom the EA was sent. Section 7 provides references.

1.5 APPLICABLE REGULATORY REQUIREMENTS

NEPA requires decision-makers to understand major permitting requirements of the Proposed Action so that early planning is carried out effectively and potentially impeding issues, as well as other state and federal requirements, are clearly understood. There are several potentially applicable regulatory requirements related to the Proposed Action discussed in this EA. A brief description of the regulatory requirements is provided below. Additional details related to the regulatory requirements are provided in Section 4, Environmental Consequences.

Endangered Species Act – Section 7. If the Proposed Action would impact any species listed under the Endangered Species Act, the United States Fish and Wildlife Service (USFWS) must be contacted, consulted and suitable mitigation actions determined and undertaken.

Resource Conservation and Recovery Act. Solid and hazardous wastes generated from implementation of the Proposed Action must be managed in accordance with Resource Conservation and Recovery Act (RCRA) regulations and the Buckley AFB Facilities Excellence Plan.

Stormwater General Permit. A United States Environmental Protection Agency (USEPA) Stormwater Construction General Permit would be required for Proposed Construction II projects that disturb one-acre or more of land.

SECTION 2

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section of the EA briefly describes the seven proposed construction projects and demolition of seven buildings and concrete foundations at the old marine compound. The EA also assesses the effects of operating the completed buildings and facilities. Three alternatives are analyzed in this EA: (1) the Proposed Action for each facility (either a construction or demolition at a specific site), as described below in Section 2.1; (2) the Alternative Action 1 (time-delay, downsize or exclude "optional" components of the Proposed Action), as described below in Section 2.2.2; and (3) the No Action Alternative, as described in Section 2.2.3 below. Alternatives considered but eliminated from further analysis are described in Section 2.2.1.

2.1 PROPOSED ACTION

Buckley AFB proposes to construct and operate seven new facilities and demolish eight existing structures at Buckley AFB for FY05 and 04.

The seven construction projects included in this EA are:

- Athletic Fields
- Chapel
- Child Development Center
- Clinic
- Leadership Development Center
- Munitions and Hazardous Materials Entrance Gate, and
- New Visitors Center.

The eight demolition projects included in this EA are:

- Building 19 (Camana Club)
- Building 40 (North Gate Visitors Center)

- Building 41 (North Gate Guard House)
- Building 902 (Old Base Exchange)
- Building 1620 (Radar Relay Building)
- Building 1631 (Electrical Shop)
- Building 1632 (Reserve Force Building), and
- Marine Compound Concrete Foundations.

Construction projects would include site clearing (ground disturbance, grading, foundation excavation, and utilities trenching); building erection and interior completion (except for the Athletic Fields); utility connections; walkway, access road, and parking lot installation; and landscaping installation. Facilities operations would include occupation of completed buildings; operation of associated building components (heating, ventilating and air conditioning [HVAC] equipment, communication equipment, computers, security systems, appliances, general building and facility lighting, and bathrooms); maintenance of landscaping; and use and maintenance of the Athletic Fields. Demolition would include removal of building components; destruction of buildings and foundations; disconnection/removal of utility connections; and site grading. Generally, construction of new buildings (from site clearing to being available for occupation and use) and demolition of existing buildings (from removal of building components to site grading) requires 365 to 400 days. The period of time required to complete each construction and demolition project may exceed or be less than this time period, depending on the size and complexity of each project. Additional detailed descriptions for each construction and operation, and/or demolition project are provided below in Sections 2.1.1 through 2.1.8. Section 2.1.9 provides details of general construction and site preparation. This is followed by a description of alternatives considered but eliminated from further study, the Alternative Action 1, and No Action Alternative, in Sections 2.2.1, 2.2.2, and 2.2.3, respectively.

2.1.1 Athletic Fields

Buckley AFB proposes to construct and operate a group of Athletic Fields at Buckley AFB. The Athletic Fields would be located either on an approximately 14 acre

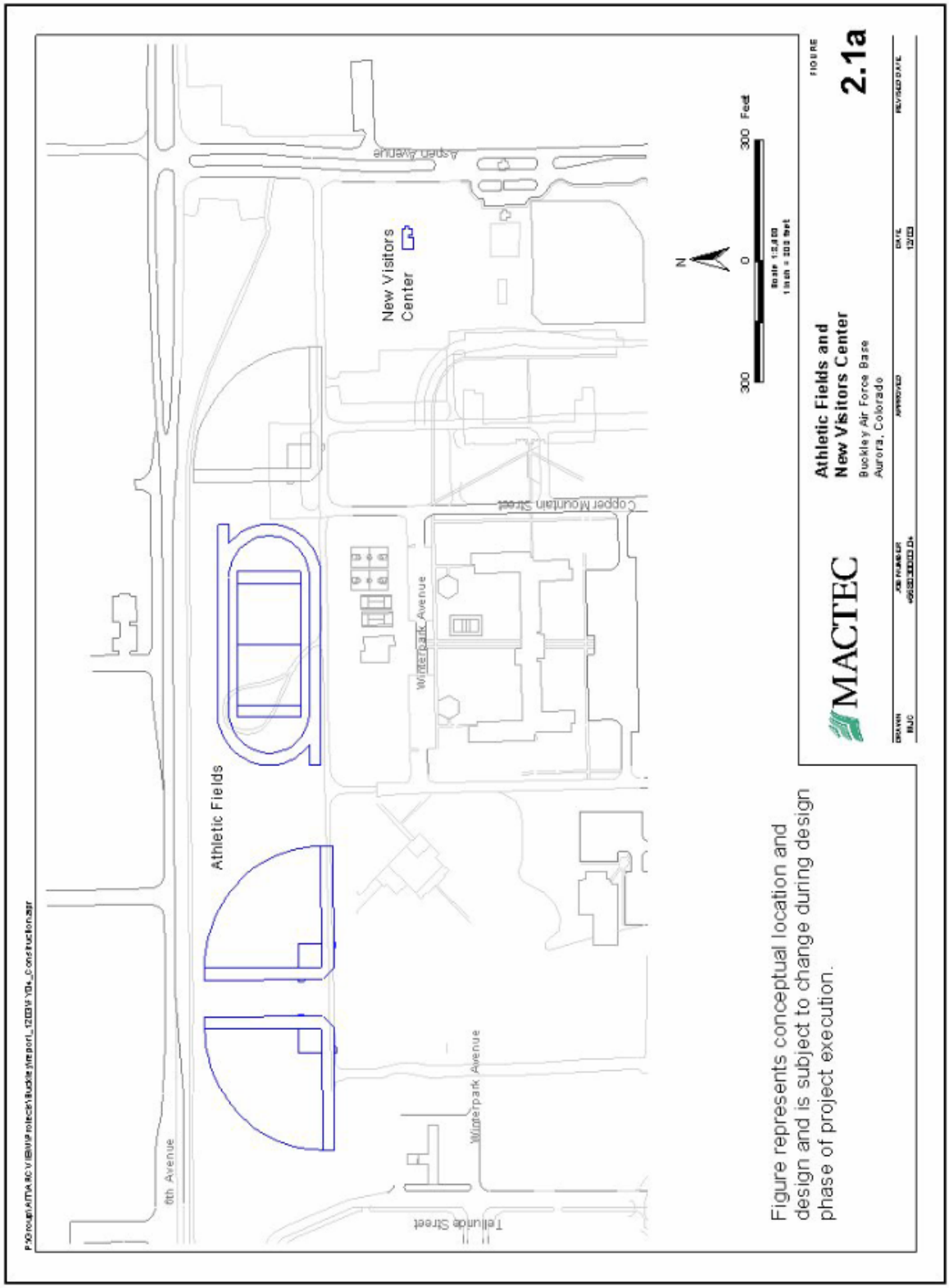
rectangular plot located along the northern installation boundary between Aspen Avenue and Telluride Street on the east and west, and directly north of Winterpark Avenue or on a 16 acre rectangular plot located west of the intersection of Telluride Street and Devils Thumb Avenue, near the western boundary of the base. The locations are shown in Figures 2.1a and 2.1b. The Athletic Fields would provide base personnel with a location for organized athletic events including football, soccer, softball, and track. The fields may also be used for other events (i.e. concerts, tournaments, etc.), which would not be open to the public. A total of two softball fields, one football/soccer field, and one running track are planned for construction. Bleachers, lighting, and public toilets would be provided. The athletic field areas would be fenced and accessible by road from Telluride Street and/or Winterpark Avenue. The athletic fields would be available for use during the day and at night, as the fields would be provided with lighting.

Site preparation would include removal of existing construction fencing used to direct traffic to the ongoing athletic center construction site, removal of residual asbestos (see Sections 3.12 and 4.2.10 for additional details), grading, tree removal and utility installation. Construction of field specific hardware and accessories would follow utility location. This includes construction and installation of bleachers, backstops, goal posts and goals, drinking fountains, and fencing. Field sodding would not occur until other on or cross-field construction work is completed to avoid jeopardizing new grass.

2.1.2 New Visitors Center

Buckley AFB proposes to relocate, construct and operate a new Visitors Center at the North Gate located on the north central boundary of the installation and due south of 6th Avenue. The new Visitors Center would be an approximately 1,000 square foot (ft^2) cinder block and glass single-story building located north of the existing North Gate. The facility would include an expanded 32-car parking lot, with existing satellite parking located on the east side of Aspen Avenue. Relocation of the Visitors Center outside of the existing Main Gate would relieve congestion and enhance force protection at the North Gate, improve pedestrian circulation, allow development of additional parking for

nearby space operations personnel, and improve first impressions of Buckley AFB. The proposed location of the new Visitors Center is shown in Figure 2.1a.


Athletic Fields and
New Visitors Center
Buckley Air Force Base
Aurora, Colorado
2.1a
MACTEC
Athletic Fields
New Visitors Center
6th Avenue
Aspen Avenue
Copper Mountain Street
Wilderpark Avenue
Tellurde Street
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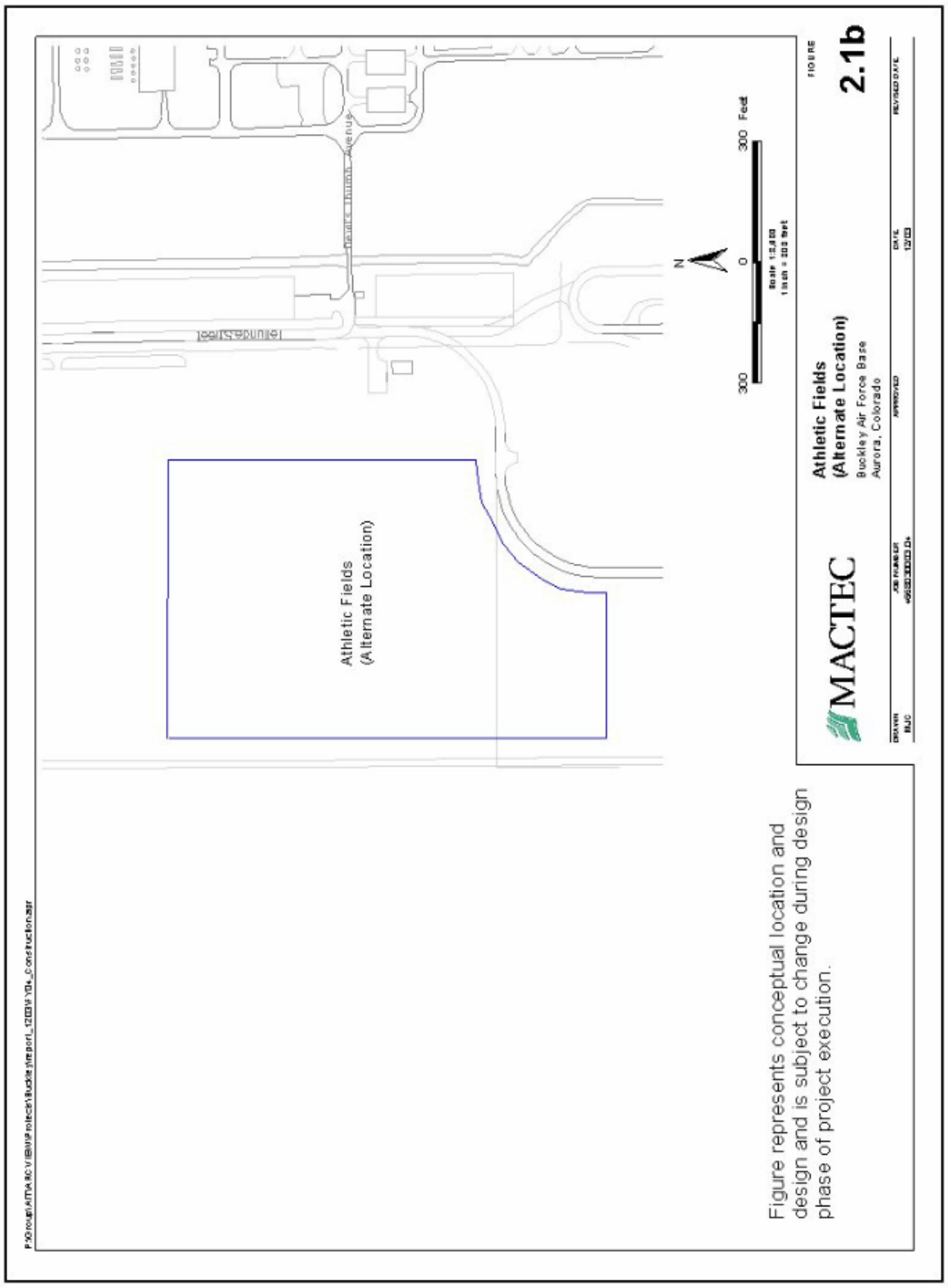
300 Feet
Figure represents conceptual location and design and is subject to change during design phase of project execution.


Athletic Fields
(Alternate Location)
Jamaica Street
Jamaica Street
N
300
0
300 Feet
Athletic Fields
(Alternate Location)
Buckley Air Force Base
Aurora, Colorado
MACTEC
2.1b
Figure represents conceptual location and design and is subject to change during design phase of project execution.

2.1.3 Chapel

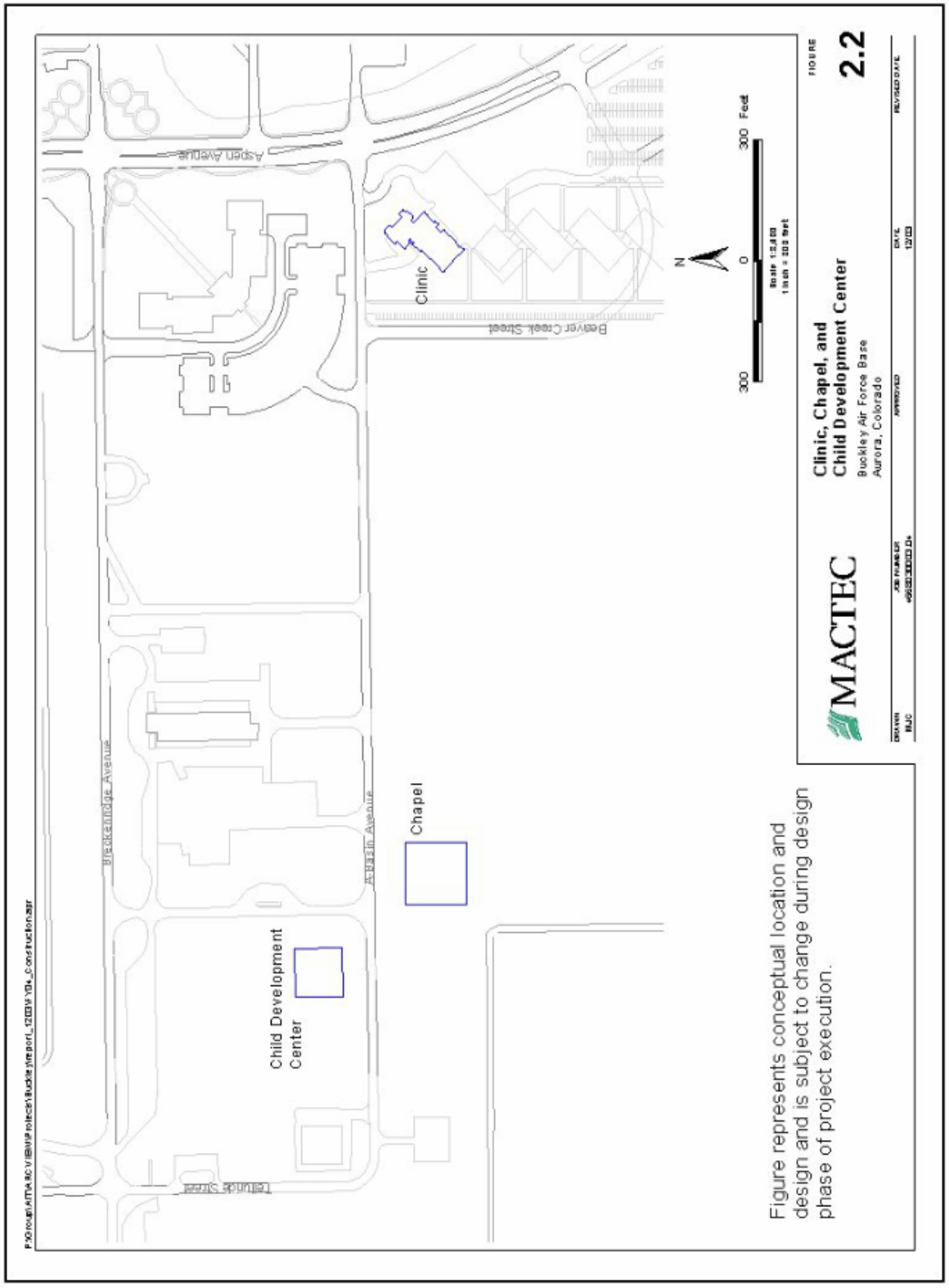
Buckley AFB proposes to construct and operate a new Chapel that would provide on-base religious services and educational programs for personnel. The new approximately 26,500 ft^2 Chapel would be located at a 3.6 acre site on the south side of A-Basin Avenue, approximately 1,200 feet (ft) west of Beaver Creek Street, as shown in Figure 2.2. The southwest edge of the Chapel site slopes steeply to the southwest toward the East Toll Gate Creek channel that passes approximately 1,400 feet from the Chapel site. The site is flat and would require little grading. Site preparation work would be limited because:

- The proposed site is located near an asphalt roadway that provides good access for construction machinery and materials delivery.
- The site is level.
- Water, electricity, and natural gas are available close to the site.

The Chapel is designed to accommodate approximately 300 personnel (per the United States Air Force [USAF] "Religious Facility Design Guide") and would be used to provide ministry, counseling services, and religious education, as well providing multi-function aspects so it can be utilized by other Buckley AFB organizations. The structure would be a single or two-story frame building with reinforced concrete foundation and floating slab. The exterior would be slit-faced concrete masonry unit (CMU) with finish system accents and standing seam metal roof. Heating would be supplied by gas-fired forced air and the building would have separate parking and sidewalk access.

2.1.4 Child Development Center

Buckley AFB proposes to construct and operate an approximately 26,000 ft^2 Child Development Center. The proposed facility would be located between A-Basin Avenue to the south and Breckenridge Avenue to the north, and due west of Eldora Street (Figure 2.2). The Child Development Center site is a flat, approximately three acre parcel.


Aspen Avenue
Clinic
Beaver Creek Street
Child Development Center
Chapel
Arapahoe Avenue
Tallahassee Street
N
0
300
300 Feet
MACTEC
Clinic, Chapel, and Child Development Center
Buckley Air Force Base
Aurora, Colorado
2.2
Figure represents conceptual location and design and is subject to change during design phase of project execution.

Site preparation work would be limited because:

- The proposed site is located near an asphalt roadway that provides good access for construction machinery and materials delivery.
- The site is level.
- Water, electricity, and natural gas are available close to the site.

The Child Development Center would be a single or two-story steel frame building built on a reinforced concrete foundation and floating slab. The exterior would be brick with finish system accents and standing seam metal roof. The Child Development Center would include a pick-up/drop-off area, outdoor play area, utility spaces, and parking lot; the building would be air-conditioned. The Child Development Center is sized to accommodate 192 children.

2.1.5 Clinic

Buckley AFB proposes to construct and operate an approximately 5,000 ft^2 addition to the Aeromedical Clinic (Building) in order to meet the needs of active duty personnel. Anticipated medical personnel increases from 35 individuals in 2000 to 120 individuals in FY04 are necessary to support the base population increase. Although a portion of the required medical services would be housed off-site, several functions must remain on the installation including Flight Medicine, Bioenvironmental Engineering, Public Health, and Demand Reduction. The proposed existing Clinic addition/alteration (ADAL) would accommodate increases in staff for these functions.

The Clinic is located on the southwest corner of Aspen Street and A-Basin Avenue. The Clinic currently consists of the building structure, parking lots, sidewalks and surrounding lawn. Figure 2.2 shows the Clinic location and projects the new addition. The Clinic addition would consist of reinforced concrete pier foundation with structural floors. Roof and siding would match the existing Clinic, and the floor plan would integrate facilities in the existing and new portions. Design and access would be in

accordance with the Americans With Disabilities Act, and USAF guidelines and criteria for medical facilities. The completed facility would have an 18-ton air conditioning capacity.

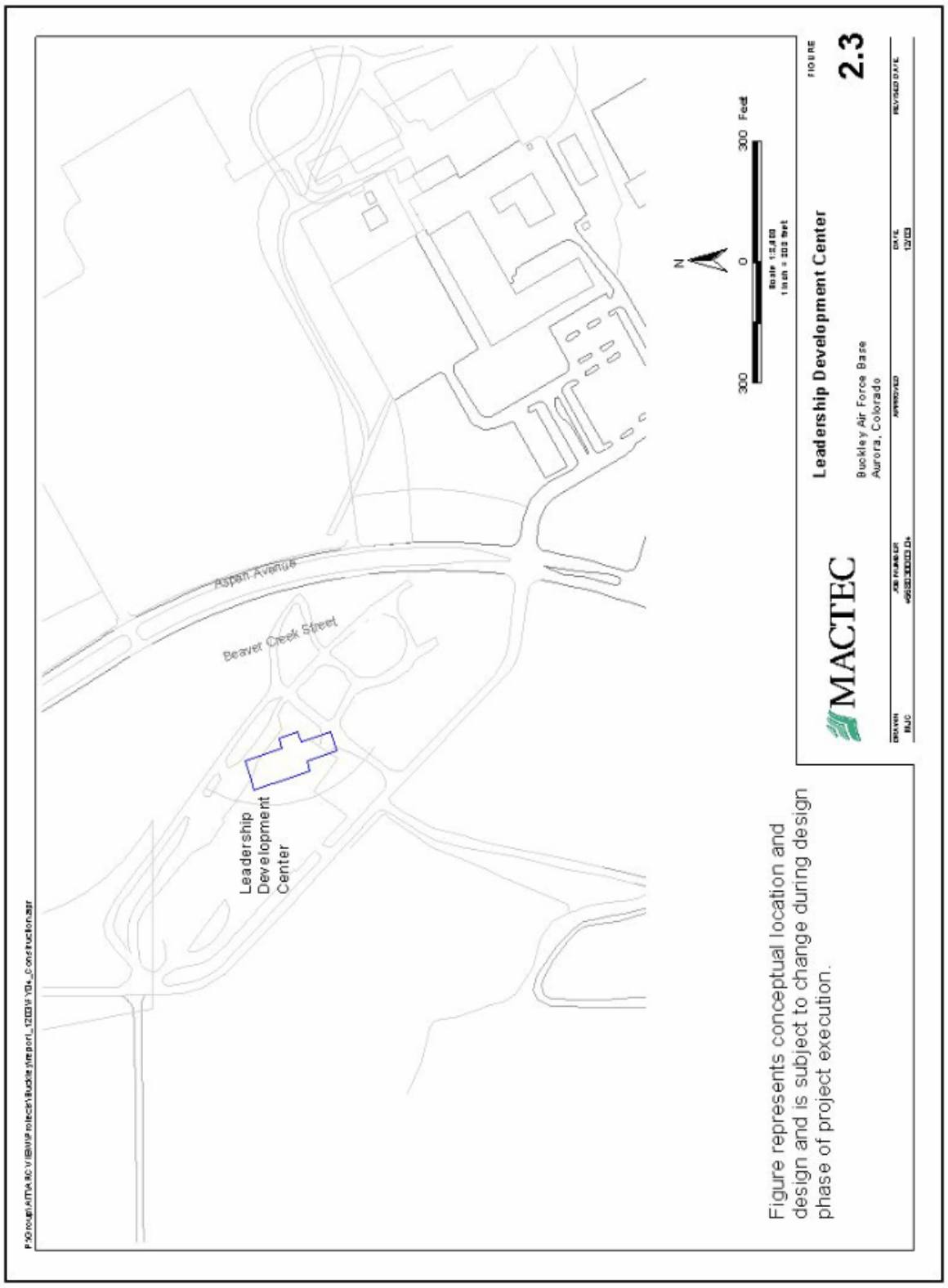
2.1.6 Leadership Development Center

Buckley AFB proposes to build and operate an approximately 18,000 ft^2 Leadership Development Center. An adequate Leadership Development Center is essential to provide 460th ABW and supported organizations with space to conduct training and organizational meetings including large meetings. The facility would include dividable spaces, a video-teleconferencing area, and kitchen with capacity to host large meetings and official military functions. The capacity of the Leadership Development Center would be 600 persons, while fewer than 10 new employees would be needed to operate this facility.

The Leadership Development Center would be a single-story frame structure with reinforced concrete foundation and slab, split-face CMU exterior and standing seam metal/single ply roof. The facility would be located adjacent to Aspen Avenue (Figure 2.3) and would be provided with an access road, parking lots, sidewalks, lawn and landscaping, and pre-wired voice and local area networks.

2.1.7 Munitions and Hazardous Materials Entrance Gate

Buckley AFB proposes to construct and operate a new Munitions and Hazardous Materials Entrance Gate that would provide an efficiently configured site plan, enhance vehicular access and provide additional Force Protection capabilities. The new Munitions and Hazardous Materials Gate would be located along 6^{th} Avenue, east of the North Gate, as shown in Figure 2.4. The new Munitions and Hazardous Materials Gate would be provided with parking for guard vehicles and would be equipped with a vehicle inspection area that would be used to inspect in- and outbound vehicles. The new gate would allow the point of hazardous cargo entrance onto and exit off the base to be moved a safe distance from the currently inhabited Navy and Marines Reserve Center (NMRC). It must meet a safe standoff distance of 1,000 feet from inhabited facilities.


Aspen Avenue
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Leadership Development Center
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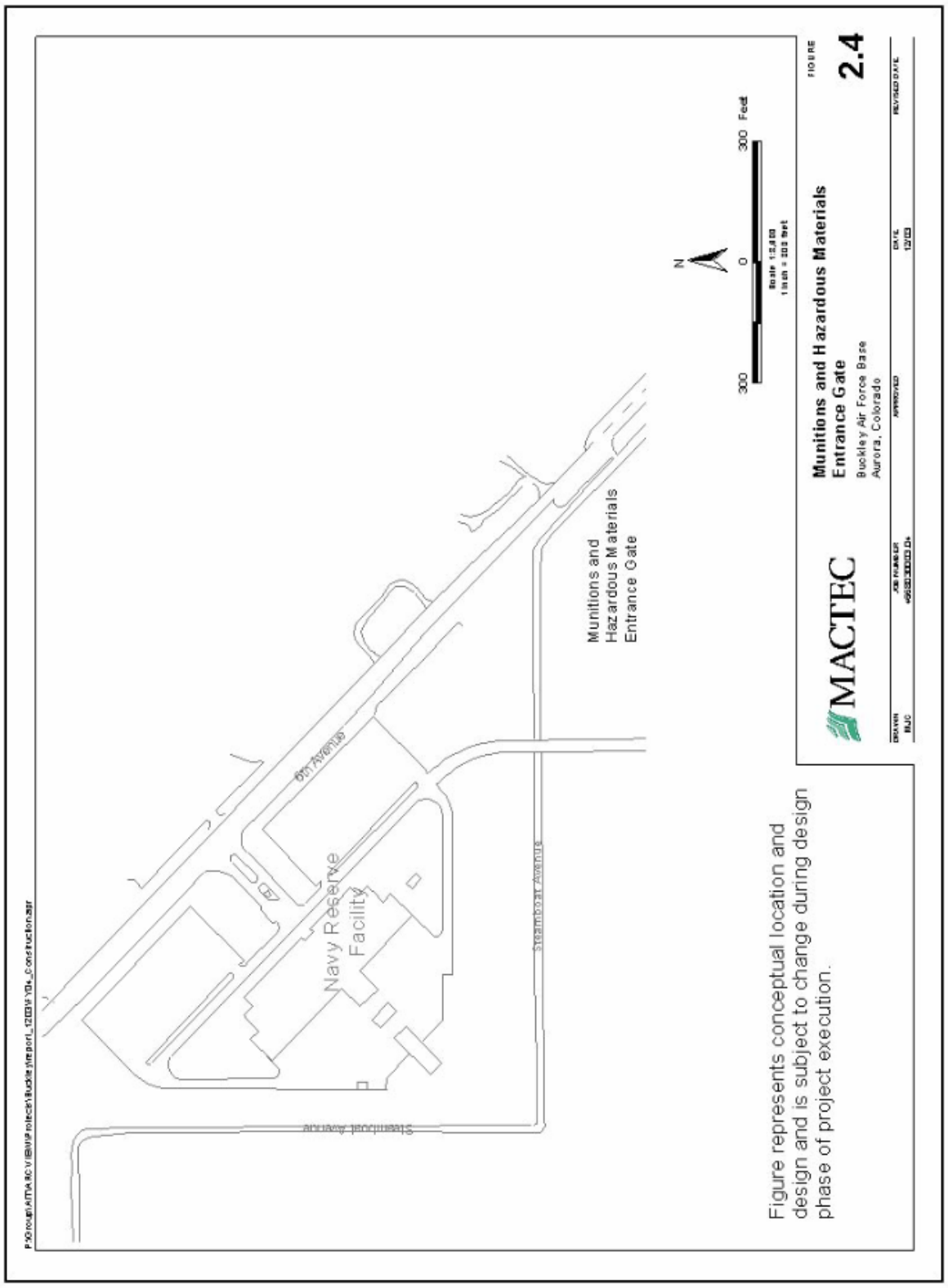
Leadership Development Center
Buckley Air Force Base
Aurora, Colorado
2.3
Figure represents conceptual location and design and is subject to change during design phase of project execution.


Munitions and Hazardous Materials Entrance Gate
Navy Reserve Facility
6th Avenue
Steamboat Avenue
Munitions and Hazardous Materials Entrance Gate
2.4
MACTEC
Figure represents conceptual location and design and is subject to change during design phase of project execution.

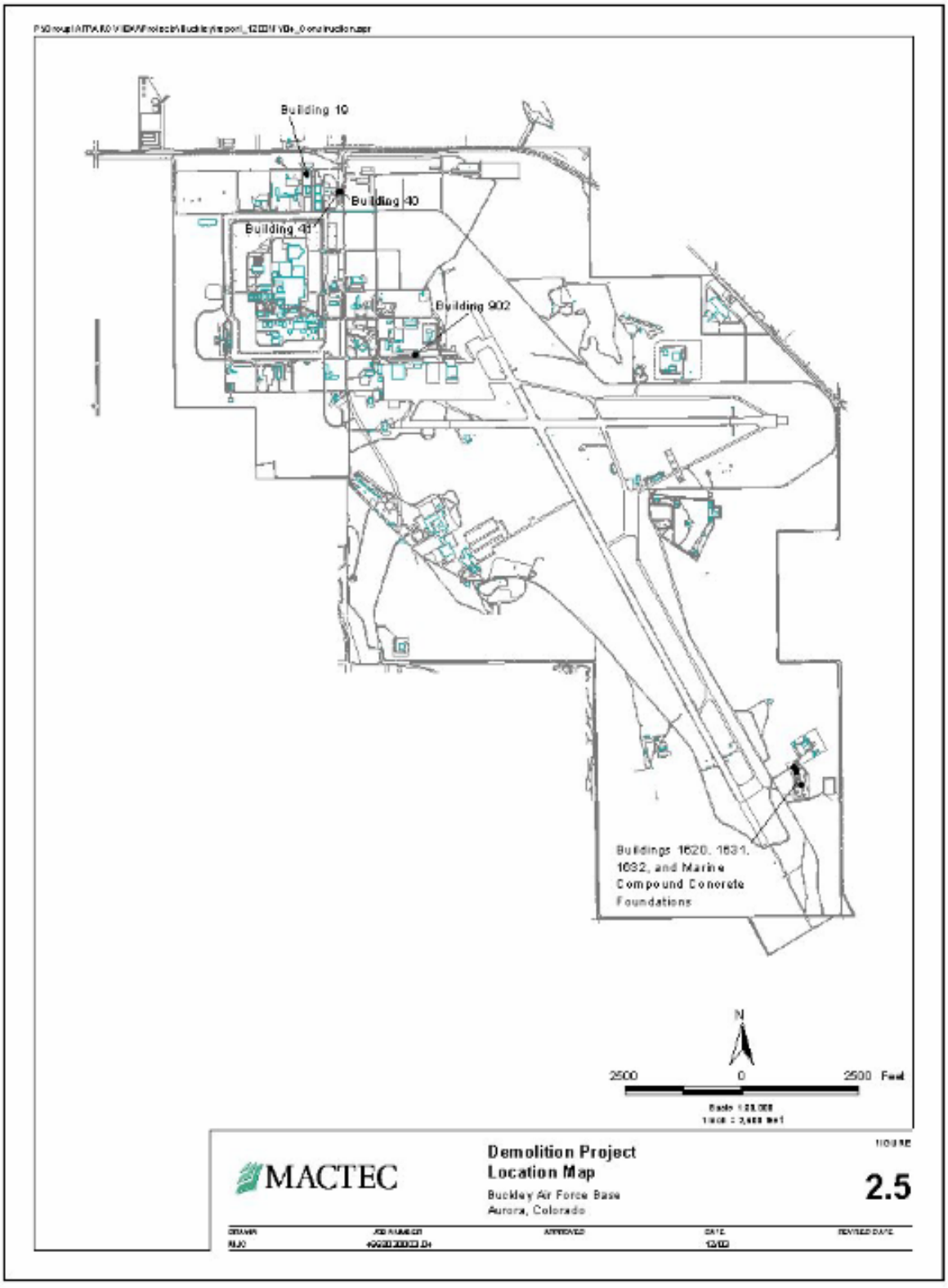
The primary usage of this gate will be to bring munitions and other hazardous cargo onto the installation. Entities delivering cargo through the new gate would be required to provide advance notice to the installation to prepare for acceptance. It will not be a manned gate and would not affect traffic entering or exiting the installation. The parking and vehicle inspection areas would be paved. Specific details of the size of the parking area and vehicle inspection area are not known. For the purposes of this EA, it will be assumed that parking will be provided for two vehicles and the vehicle inspection area would be similar to the vehicle inspection lane that currently exists at the Mississippi Gate. It will be assumed that the vehicle parking and delivery vehicle pull-off and inspection area will total 10,000 ft2 of paved surface.

2.1.8 Demolitions

Eight demolition projects are included in the Proposed Construction II as follows:

- Building 19 (Camana Club)
- Building 40 (North Gate Guard House)
- Building 41 (North Gate Visitors Center)
- Building 902 (Old Base Exchange)
- Building 1620 (Radar Relay Building)
- Building 1631 (Electrical Shop)
- Building 1632 (Reserve Force Building), and
- Marine Compound Concrete Foundations.

The location of the demolition projects is shown on Figure 2.5. Some of the structures scheduled for demolition may potentially contain hazardous materials including lead-based paint (LBP) and/or asbestos insulation and/or floor/ceiling tiles that were used in World War II era buildings. Building 19 is believed to contain asbestos insulation (see Sections 3.12 and 4.2.10 for additional details). Suspect building materials (World War II era paints, asbestos, etc.) from all buildings would be tested as necessary prior to final disposal. Building materials would be treated as contaminated, certified as deminimus


Building 10
Building 40
Building 48
Building 902
Buildings 1620, 1631, 1632, and Marine Compound Concrete Foundations
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2500 Feet
MACTEC
Demolition Project
Location Map
Buckley Air Force Base
Aurora, Colorado
2.5

materials by a trained professional, and/or tested to certify that they are not hazardous and can be salvaged, recycled, or disposed of in a RCRA non-hazardous waste landfill without further treatment. All materials would be disposed or recycled in accordance with RCRA and Colorado Department of Public Health and the Environment (CDPHE) hazardous materials and waste management regulations. All demolition contracts would require contractors to certify that demolitions would follow all applicable hazardous materials and waste management division regulations.

2.1.9 Construction and Site Preparation

Construction of each Proposed Construction II facility would follow the standard Air Force site preparation and construction process. Site preparation consists of ground clearing to remove vegetation and debris followed by soil grading and compaction to achieve appropriate load-ratings. Erosion control structures such as erosion fencing, temporary drop structures and retention basins would be erected as necessary. Next, utilities would be channeled into the subsurface and building materials and equipment would be stockpiled at designated storage sites at or adjacent to the new facility locations. The structures would be erected and paving and landscaping would be added.

2.2 DESCRIPTION OF ALTERNATIVES TO THE PROPOSED ACTION

2.2.1 Alternatives Considered But Eliminated from Further Study

Mission requirements for Buckley AFB define minimum facility and assigned military personnel needs. The Proposed Construction II projects are designed to contribute to and are intended to be a component of orderly construction of required and necessary infrastructure and facilities. Layout and design options were considered during development of the General Plan. This process included relevant users, planners, designers and engineers from 460th ABW and tenant organizations. The process also considered existing and planned land uses, consolidating and collocating facilities with like or compatible land uses, access routes, and availability of existing infrastructure and utilities. The Buckley AFB General Plan established a comprehensive and systematic development plan for the base through the year 2020. The General Plan was awarded an

architectural and planning award from the Air Force. The siting of all construction projects under this EA is compatible with the General Plan. For this reason alternate sitings for these projects are not considered as alternative actions in this EA. However, the following alternative to the Proposed Action is also presented.

2.2.2 Alternative Action 1: Time-Delay, Downsize or Exclude "Optional" Components of the Proposed Action Alternative

It is possible that some individual Construction II projects may be time-delayed, downsized or not constructed at all. In addition, other alternative sites for Proposed Construction II projects are limited due to additional future proposed construction projects, flightline constraints (including Air Installation Compatible Use Zone [AICUZ], accident potential zones, and clear zones) and natural resource constraints (potential wetlands taking). Siting on the western side of the installation is not practicable due to lack of infrastructure (utilities, water, electricity, roads), and off-base locations are also impracticable.

2.2.3 No Action Alternative

Under the no action alternative, the Proposed Action construction and demolition projects would not be completed.

SECTION 3

AFFECTED ENVIRONMENT

Buckley AFB is located on a 3,283-acre parcel located on the northeast side of the city of Aurora in Arapahoe County, Colorado. Aurora is the second largest city in the Denver metropolitan area and is approximately five miles east of Denver (Buckley AFB 2002a). 460 ABW became the host organization at Buckley AFB in October 2001 and supports many civilian and DOD tenants.

Construction and operation of the Proposed Construction II projects involves potential disturbance to approximately 31 acres of land within the 3,283-acre Buckley AFB. Resources that may be impacted as well as potential conflict issues analyzed in this EA are:

- Air Quality
- Geology, Soils and Topography
- Hazardous Materials
- Hazardous Wastes
- Utilities
- Biological Resources
- Traffic
- Water Resources
- Radon
- Lead-based paint
- Asbestos
- Noise
- Socioeconomics and Environmental Justice

The region of influence (ROI) related to the resources potentially impacted and analyzed in this EA are shown below on Table 3.1.

Table 3.1: Environmental Resource Regions of Influence	
Environmental Resource	**Region of Influence**
Air Quality	Denver Metropolitan Air Shed.
Geology, Soils and Topography	31-acre construction/demolition and operation sites.
Hazardous Materials	31-acre construction/demolition and operation sites.
Hazardous Wastes	31-acre construction/demolition and operation sites and hazardous waste treatment storage and disposal facilities (TSDF).
Utilities	31-acre construction/demolition and operation sites, water suppliers, off-base wastewater treatment facilities, and local landfills
Biological Resources	Buckley AFB.
Traffic	All on-base parking areas and roadways within Buckley AFB, major off-base corridors located near access points, including 6th Avenue, Mississippi Avenue, Airport Boulevard, and 6th Avenue.
Water Resources	South Platte River drainage basin, including East Toll Gate Creek, Sand Creek and Murphy Creek.
Radon	31-acre construction/demolition and operation sites.
Lead-based paint	31-acre construction/demolition and operation sites.
Asbestos	31-acre construction/demolition and operation sites.
Noise	31-acre construction/demolition and operation sites.
Socioeconomics and Environmental Justice	Buckley AFB and surrounding communities.

3.1 RESOURCES NOT EXPECTED TO BE IMPACTED

Resources not expected to be impacted by the Proposed Action and therefore not analyzed in this EA are described below. A brief explanation of why the resource is not expected to be impacted is also provided.

3.1.1 Cultural Resources

The base has been broadly surveyed for archaeological resources, and no cultural resources are known or expected in the project areas. The construction and demolition areas have been previously disturbed and archaeological surveys indicate that it would be unlikely to find intact artifacts in the project areas. In the unlikely event that artifacts were discovered during construction or demolition, all activities should cease, and 460 Civil Engineer Squadron/Environmental Flight (CES/CEV) would be contacted.

3.1.2 Floodplains

The areas included in the Proposed Action do not lie within the 100-year floodplains of any of the three creeks that drain Buckley AFB.

3.1.3 Airspace

The Proposed Action would not involve any flying missions at Buckley AFB or any other airspace; therefore, effects on air space are not expected and are not analyzed in this EA.

3.1.4 Wetlands

The Proposed Action would not result in any impacts to wetlands. Although several wetland areas do exist at Buckley AFB, the Proposed Action projects do not cause ground disturbance within 2,000 feet of any wetland.

3.1.5 Environmental Restoration Sites

The Air Force established the Environmental Restoration Program (ERP) to identify, characterize, and evaluate past disposal sites and remediate contamination on its installations as needed to control the migration of contaminants and potential hazards to human health and the environment in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirements. Preliminary ERP assessments are currently being conducted, which may discover other environmental concerns not previously identified at the base. These assessments may potentially identify concerns within areas proposed for construction.

Related to previously identified ERP sites, the demolition of Building 902 would be on the fringe of ERP site 9, which is a former underground storage tank (UST) burial site. Although this demolition project would take place near ERP site 9, Building 902 consists of a slab-grade concrete foundation, without a basement, and therefore the project would not be expected to have any impact on the ERP. A review of the locations of ERP sites currently listed on Buckley AFB revealed that they would not affect or be affected by the remaining Proposed Action construction and demolition projects. Conclusions from ongoing ERP assessments are not currently know. Therefore, effects from the ERP will not be analyzed further in this document. However, if ongoing ERP assessments reveal concerns within areas proposed for construction they will be addressed on a case-by-case basis.

3.1.6 Land Use and Aesthetics

An objective of the Buckley AFB General Plan (Buckley AFB, 2002a) is to consolidate functions within the base for more efficient and compatible land usage. Land uses within Buckley AFB are generally divided into fourteen categories. The land use categories were developed to prevent incompatible siting of facilities and/or operations (i.e. avoid industrial areas being located next to housing areas). Siting of the Proposed Construction II construction projects within the fourteen land use categories at Buckley AFB was determined and based on compatible land use, as defined in the General Plan (Buckley AFB, 2002a).

The visual character of Buckley AFB is one of a military base. New housing developments have landscaped areas that provide some aesthetic value, but for the most part, the base is an industrial area that is dominated by the large radomes within the fenced area. Other buildings, particularly newly constructed buildings, are attractive and blend in with the plains landscape. Due to the existing character of Buckley AFB and efforts to site Proposed Construction II construction projects in compatible land use categories, land use and aesthetics will not be considered further in this EA.

3.1.7 Polychlorinated Byphenyls (PCBs)

The disposal of PCBs is regulated by 40 CFR Part 761, under the Toxic Substances Control Act (TSCA), which banned the manufacture and distribution of PCBs, with the exception of PCBs used in enclosed systems. By federal definition, “PCB equipment” contains 500 parts per million (ppm) PCBs or greater; whereas “PCB-contaminated equipment” contains PCB concentrations equal to or greater than 50 ppm, but less than 500 ppm; and “PCB items” contain from 5 to 49 ppm PCBs. The electrical system at Buckley AFB is considered PCB-free (USAF, 2000a). All transformers with PCB concentrations over 500 ppm have been removed, replaced, or retrofitted to below 50 ppm (USAF, 2000a). In addition, the Proposed Action does not involve any additional equipment or other items containing PCBs, therefore, environmental impacts from PCBs are not expected and are not further analyzed in this EA.

3.2 AIR QUALITY

3.2.1 Baseline Air Emissions and Title V Permit

Buckley AFB is in the Denver Metropolitan Intrastate Air Quality Control Region (AQCR) 36. The 2001 Air Emissions Inventory summary for Buckley AFB is presented in Table 3.2. The inventory data include mobile and stationary sources and provides totals for these two components. An air emissions inventory is an estimate of the total mass emission of pollutants generated from a source over a period of time.

The Conformity Rule provides two significance thresholds for emissions from a federal action: (1) a regionally significant action is a Federal action for which the emissions of any pollutant represent 10 percent or more of an area's emissions inventory for that pollutant, (2) if emissions of any pollutant exceed the de minimus emission thresholds for nonattainment and maintenance areas, the emissions are significant. Total emissions within AQCR 36, ten percent of the AQCR 36 emissions, and the de minimus thresholds for maintenance areas are also provided on Table 3.2.

Table 3.2 Buckley AFB Stationary Air Emissions Inventory

Pollutant Emission Sources	CO (tpy)[4]	VOC (tpy)	SO_X (tpy)	NO_X (tpy)	PM_{10} (tpy)
Buckley AFB Mobile Emissions[2]	194.7	28.4	4.4	37.8	2.0
Buckley AFB Stationary Emissions[2]	28.2	7.8	2.0	96.2	12.0
Buckley AFB Total Emissions[2]	222.9	36.2	6.4	134.0	14.0
AQCR 36 Emission Inventory[1]	439,095	185,055	65,700	114,245	25,550
Conformity Rule De Minimus Threshold[3]	100	100	100	100	100
10 percent of AQCR 36 Emission Inventory (Significant Threshold Values)	43,910	18,506	6,570	11,425	2,555

(1) Colorado Air Quality Control Commission (CAQCC), 2000, 2001a, 2001b
(2) Source: Booz Allen Hamilton, 2002
(3) 40 CFR 93.153(b) - These limits are applicable to nonattainment and maintenance areas, and therefore apply to Buckley AFB.
(4) tpy – tons per year

Buckley AFB falls under CDPHE jurisdiction, which is tasked with issuing, renewing and enforcing the Clean Air Act (CAA) Title V Air Operating Permit (Permit

No. 950PAR118). The Buckley AFB Title V Air Operating Permit was originally issued August 28, 1997, while the current permit became effective on 1 July 2002, and will expire 30 June 2007. The permit documents stationary sources of regulated emissions at Buckley AFB, including 58 natural gas-fired boilers, 6 gasoline-fired boilers, 33 dual-fired boilers that primarily use natural gas but have fuel oil back-up, 46 fuel oil generators, 6 gasoline-fired arresting barrier engines, 34 regulated aboveground storage tanks (ASTs), 2 degreasing stations, and one abrasive paint removal station. Abrasive paint removal is performed in the Corrosion Control Hangar (Building 800) using hand-held sanders and closed-loop plastic media blasters. Boilers, generators, and arresting barrier engines burn fuels (natural gas, gasoline and fuel oil) and generate combustion emissions that can include carbon monoxide (CO), nitrogen oxides (NO_x), lead (Pb), sulfur oxides (SO_x), Total Suspended Particulates (TSP), particulate matter less than 10 microns in size (PM_{10}), and (volatile organic compounds) VOCs. Degreasing stations generate VOC emissions, and abrasive paint removal operations generate emissions of TSPs and PM_{10}.

Primary fuel storage at the Base includes two 210,000-gallon JP-8 ASTs and sixteen diesel ASTs ranging in size from 12,000 to 42,000 gallons. Additionally there are two gasoline ASTs at 4,000- and 6,000-gallon capacity, two diesel ASTs with 4,000- and 6,000-gallon capacities, and three 12,000-gallon gasoline USTs. The fuel storage tanks are included in the Title V Air Operating Permit as emission sources of VOC created through evaporation, tank filling and breathing losses.

Mobile sources at Buckley AFB include on and off-road vehicles and equipment, aerospace ground equipment, and aircraft operations. Mobile sources are not considered under the CAA Title V operating permit or the Colorado operating permit program, but are significant components of total base emissions.

The Title V Air Operation Permit places base wide emission limits on all criteria pollutants, but does not impose operational restrictions. Buckley AFB's permit limits emissions to below major Prevention of Significant Deterioration (PSD) source

thresholds (Booz-Allen & Hamilton 2000). The Permit Engineering Review established base 1996 actual emissions levels for SO_x and NO_x of 23 and 142 tons per year (tpy), respectively. According to the 1997 Permit Technical Review, a major modification of source emissions resulting in a net increase of at least 40 tpy SO_x or NO_x above the base levels would subject Buckley AFB to Lowest Achievable Emission Rates (LAER), and require emission offsets. Emissions of SO_x and NO_x for CY 2001 were less than the base levels; therefore no PSD issues are identified for CY 2001 (Booz-Allen & Hamilton, 2002).

Buckley AFB is now a minor source for CO and VOCs (potential to emit less than 250 tons per year). The base is a synthetic minor source for NOx and sulfur dioxide (SO_2) emissions under the PSD provisions because the base accepted permit limits that establish the potential to emit for these emissions at less than 250 tons per year. For CO, PM_{10}, and VOCs, Buckley AFB is a synthetic minor source under the Title V provisions because the base accepted permit limits that establish the potential to emit for these emissions at less than 100 tons per year. Buckley AFB is classified as a major source for NOx and SO_2 under Title V provisions. Future addition of new sources and modifications of existing sources at Buckley AFB resulting in a significant net emissions increase (See CDPHE Title 5 Colorado Code of Regulations [CCR] 1001-5, Regulation No. 3, Part A, Section I.B.37 and 58) for any pollutant as listed in the Regulation No. 3, Part A, Section I.B.58 or a modification which is major by itself will result in the application of the PSD or Non-attainment Area New Source Review (NANSR) requirements as appropriate (CDPHE, 2002).

Buckley AFB has developed its own operational restrictions as an internal strategy for compliance. The 2001 inventory shows Buckley AFB to be well below permit limits for all pollutants (Booz-Allen & Hamilton, 2002).

3.2.2 Ozone Depleting Substances

It is likely that buildings installed as part of the Proposed Action would be provided with air conditioning units for climate control. The refrigerants used in these units may

contain ozone depleting substances (ODS). Improperly managed ODS can be harmful to the environmental if they are released to the atmosphere. ODS are extremely stable and, when release to the atmosphere, are carried by winds eventually reaching the stratosphere (about 10 kilometers above the Earth's surface). Strong ultraviolet (UV) light breaks apart the ODS molecules and results in the release of chemical compounds that destroy stratospheric ozone. Although stratospheric ozone is constantly produced and destroyed through natural cycles, the overall amount of ozone should remain essentially stable. This was the situation until the past several decades. Recent large increases in ODS releases have caused the stratospheric ozone balance to become upset, with ozone being destroyed faster than natural creation occurs. Since ozone filters out harmful UV radiation, less ozone means higher UV levels at the Earth's surface. Increased UV levels on Earth have been linked to skin cancer, cataracts, damage to plastics, and harm to certain crops and marine organisms.

Due to these potential environmental concerns related to ozone depletion, regulations for proper management of ODS have been developed and include the following:

- No owner or operator of a commercial or industrial building shall intentionally vent or dispose of any ozone depleting compound refrigerant (Title 5 CCR 1001-19 Regulation No. 15, Part C, Section II.C).

- The owner or operator of any existing stationary appliance (air conditioning equipment containing an ozone depleting compound rated at 100 horsepower or greater) shall submit an ozone depleting compound refrigerant registration form and pay a fee of twenty five dollars ($25.00) for each stationary appliance to the CDPHE Air Pollution Control Division within sixty (60) days of July 1 of each year and for any new stationary appliance within thirty (30) days of installation. Total fees shall not exceed two hundred dollars ($200.00) per facility (Title 5 CCR 1001-19 Regulation No. 15, Part C, Section III.A).

- The owner or operator of any registered appliance shall have available for inspection by the Division or its agent proof of current registration (Title 5 CCR 1001-19 Regulation No. 15, Part C, Section III.D).

Buckley AFB and contractors involved in installation of air conditioning units would need to comply with the regulations listed above, as applicable.

3.3 GEOLOGY, SOILS AND TOPOGRAPHY

3.3.1 Geology

Buckley AFB is located within the Denver Basin, a 60,000 square mile sedimentary rock depression east of the Front Range of the Rocky Mountains in east-central Colorado (Chronic 1980, Buckley AFB, 2002b). The Denver Basin was formed approximately 67 million years ago during a mountain-building event called the Laramide Orogeny. The basin is part of the Piedmont section of the Great Plains physiographic province that extends north and east into Wyoming, Nebraska, and Kansas (USAF, 2000a)

Geologic layers within the basin are in excess of 13,000 ft thick and range in age from Late Pennsylvanian through Quaternary. The Denver Basin comprises seven principal sedimentary formations, listed in descending order within the basin: the Castle Rock Conglomerate; the Dawson Arkose; the Denver, Arapahoe, and Laramie formations; the Fox Hills Sandstone; and a 5,000- to 8,000-ft-thick, relatively impermeable shale formation, the Pierre Shale, which forms the bottom of the basin (USAF, 2000a). The Castle Rock Conglomerate and the Dawson Arkose outcrop south of the base but do not underlie Buckley AFB. Surface deposits consist of unconsolidated, eolian (windblown) and alluvial (deposited by water) sediments that may reach a thickness of 30 ft. These sediments were initially deposited during the Pleistocene epochs (up to 3 million years ago) and continue to be deposited today (USAF, 2000a).

3.3.2 Soils

The Natural Resources Conservation Service (NRCS) prepared descriptions and maps of the soil associations present at Buckley AFB (NRCS, 1971). Soil associations are

landscapes exhibiting distinctive groupings of soil types. Fifteen soil types were identified on the base, most of which are classified as moderately to highly erodible. The soil types are listed on Table 3.3 and shown on Figure 3.1. The major soil associations at Buckley AFB are classified as Fondis-Weld, Renohill-Buick-Little, and Alluvial-Nunn (Hunter/ESE, Inc., 1989). Other areas on Buckley AFB were identified as gravel pits, rock outcrop complex, terrace escarpments, and sandy alluvial land. The majority of the installation is developed on deep silt loam soils of the Fondis-Weld association. Soils at the Proposed Construction II project sites are of this association and are well-drained. The sites are mostly flat with little visible sloping.

Table 3.3: Buckley AFB Soils Description

Name	Description
Bresser sandy loam, terrace, 0 to 3 percent slopes	Occurs along major drainage ways, runoff is slow
Bresser-Truckton sandy loams, 3 to 5 percent slopes	Occurs on slopes and ridgetops in native grass, susceptible to soil blowing
Buick loam, 3 to 5 percent slopes	Occurs in small, scattered areas on uplands in native grass, susceptible to soil blowing
Fondis silt loam, 1 to 3 percent slopes	Occurs on uplands, runoff is moderate, slightly to moderately susceptible to soil blowing and water erosion
Fondis silt loam, 3 to 5 percent slopes	Occurs on uplands, suited to cultivated crops, susceptible to soil blowing
Fondis-Colby silt loams, 3 to 5 percent slopes	Occurs along ridge tops, runoff is moderate, water holding capacity is high
Nunn loam, 0 to 3 percent	Occurs on terraces, runoff is slow, erosion is slight, water holding capacity is high
Nunn-Bresser-Ascalon complex, 0 to 3 percent slopes	Occurs on lower parts of slopes, well suited to cultivated crops, water holding capacity is moderate to high, erosion is slight to moderate
Renohill-Buick loams, 3 to 9 percent slopes	Occurs on uplands, not suited to cultivated crops, erosion is Severe
Renohill-Litle-Thedalund complex, 9 to 30 percent slopes	Occurs on grassy hillsides, runoff is moderate to rapid, not suited to cultivated crops
Rock outcrop	Occurs near where soils have been stripped so that interbedded shale and sandstone are exposed at the surface, highly susceptible to soil blowing and erosion
Sandy alluvial land	Occurs as narrow areas along major drainageways next to stream channels, subject to yearly flooding
Terrace escarpments	Occur next to streams and drainageways, soil slipping and sloughing are common, water erosion is severe

Table 3.3: Buckley AFB Soils Description	
Name	**Description**
Weld silt loam, 0 to 3 percent slopes	Occurs on uplands, water holding capacity is high, soil blowing can be severe
Weld-Deertrail silt loams, 0 to 3 percent slopes	Occurs on uplands, runoff is slight, moderately susceptible to soil blowing

3.3.3 Topography

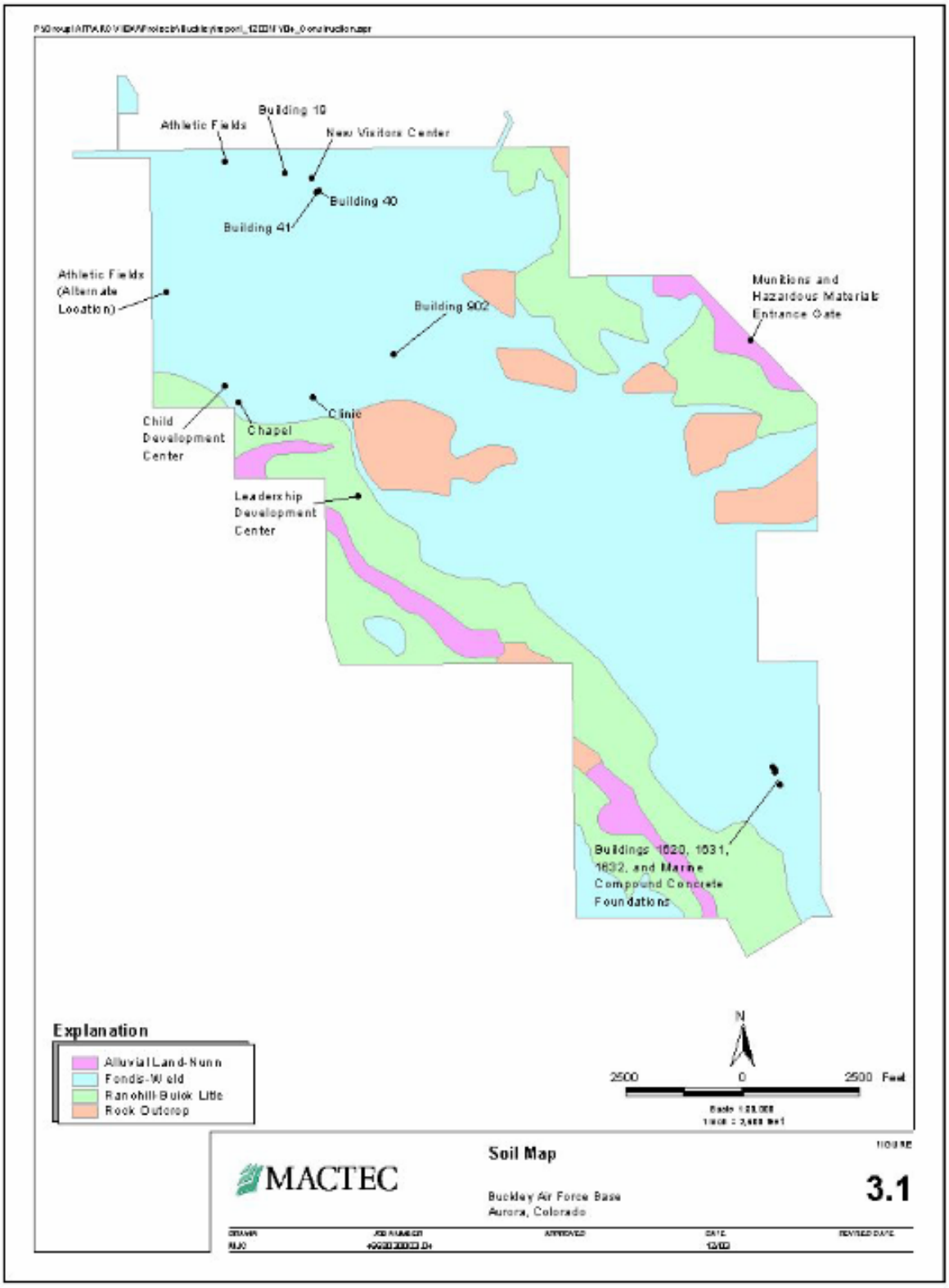
Buckley AFB is situated on the west edge of the Great Plains within a topographic depression known as the Denver Basin. Buckley AFB is relatively flat with elevations ranging from approximately 5,500 ft to 5,700 ft above mean sea level. Topography of the Proposed Construction II project sites is shown on Figure 3.2.

3.4 HAZARDOUS MATERIALS

Hazardous materials are those substances defined as hazardous by CERCLA (42 United States Code [U.S.C.] Sections 9601-9675), the TSCA (15 U.S.C. Sections 2601-2671), and the Solid Waste Disposal Act, as amended by RCRA (42 U.S.C. Sections 6901-6992). In general, this includes substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare, or to the environment when released into the environment. In addition, hazardous materials are regulated by the Emergency Planning and Community Right to Know Act (EPCRA) (42 U.S.C. Sections 11001-110505). Transportation of hazardous materials is regulated by the U.S. Department of Transportation (DoT) and Colorado Department of Transportation (CDOT) regulations within 49 CFR.

3.5 SOLID AND HAZARDOUS WASTES

No known hazardous materials are located or stored at the Proposed Action construction or demolition sites. Hazardous wastes generated through Proposed Construction II demolition projects could include LBP and asbestos wastes. Asbestos is


Athletic Fields
Building 10
New Visitors Center
Building 40
Building 41
Athletic Fields (Alternate Location)
Building 902
Munitions and Hazardous Materials Entrance Gate
Child Development Center
Chapel
Clinic
Leadership Development Center
Buildings 1620, 1631, 1632, and Marine Compound Concrete Foundations
Explanation
Alluvial Land-Nunn
Fondis-Weld
Ranohill-Buick Litle
Rock Outcrop
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MACTEC
Soil Map
Buckley Air Force Base
Aurora, Colorado
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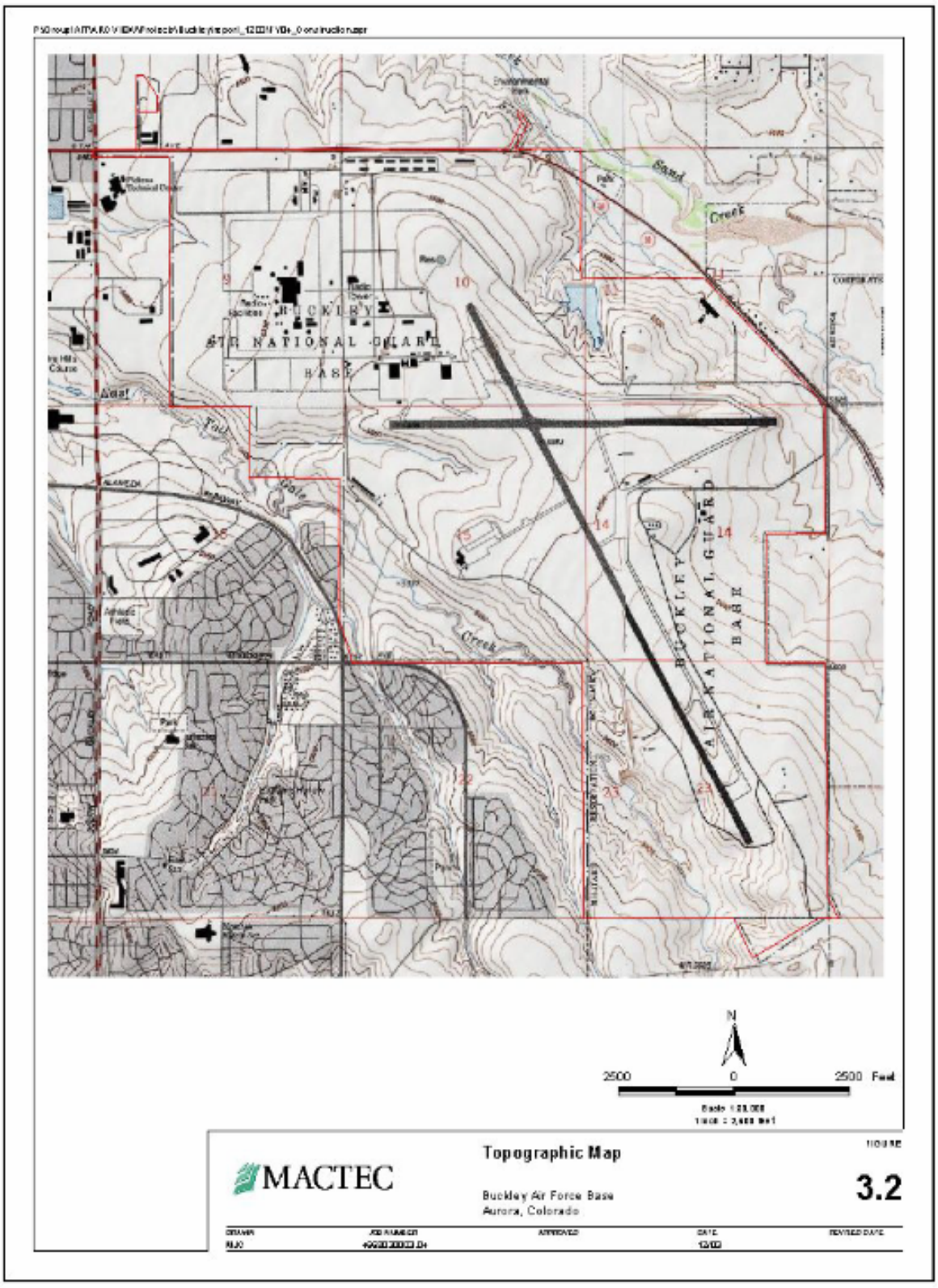
BUCKLEY
AIR NATIONAL GUARD
BASE
Sand
Creek
Tail
Gate
Creek
AIR NATIONAL GUARD
BASE
N
2500
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MACTEC
Topographic Map
Buckley Air Force Base
Aurora, Colorado
3.2

managed as a special waste. Asbestos wastes are further discussed below in Sections 3.12, Asbestos and Section 4, Environmental Consequences. However, the potential quantity and the exact nature of the materials or wastes generated are unknown. Contractors would not be permitted to leave any hazardous materials on base that could become wastes requiring disposal when projects are completed. All unused materials will be removed from the site by contractors at project completion. Although hazardous wastes would not be expected to be generated through operation of the proposed buildings and facilities, biohazardous wastes will continue to be generated at the Clinic. It is likely that the volume of biohazardous waste generation will increase with expansion of the Clinic, as the expansion will allow more patients to be treated.

Buckley AFB generated approximately 1,500 tons of non-hazardous waste in FY02 (Buckley AFB, 2002c). Of this waste volume, 0.6 tons were generated from construction and demolition activities. Buckley AFB also generated and disposed of approximately 7,510 lbs of hazardous waste in FY02 (Buckley AFB, 2002c). No biohazardous waste generation values are available.

3.6 UTILITIES

3.6.1 Water supply

Buckley AFB obtains potable water from the city of Aurora. Water use limitations can be imposed on the base by the city of Aurora under emergency drought water use restrictions. Water is distributed to facilities on base for domestic use, process use, and fire protection. Buckley AFB used approximately 102,448,000 gallons of water during FY02 (Buckley AFB, 2004a).

3.6.2 Wastewater Treatment

Buckley AFB generates both domestic and industrial wastewater. The industrial wastewater consists of water from oil/water separators (USAF, 2000b). Buckley AFB has a wastewater discharge permit that is issued by the Metro Wastewater Reclamation District. The Metro Wastewater Reclamation District treatment plant was designed to

meet population estimates through 2010, with a hydraulic capacity of 185 million gallons per day (mgd). No definitive wastewater discharge data is are available at this time, however the annual average discharges metered at the discharge designated as MP001 was 1.4 mgd for calendar year 2003.

3.6.3 Solid Waste

A private contractor manages solid waste collection and disposal services at Buckley AFB. Waste is collected from dumpsters located throughout the base and routinely transported to the Denver-Arapahoe Disposal Site, in Arapahoe County. The permitted portion of the landfill occupies 2,680 acres with an estimated design life of 40 to 50 years. Buckley AFB generated approximately 1,500 tons of non-hazardous waste in FY02, with 0.6 tons of this waste being construction and demolition derived wastes.

3.6.4 Electricity

Xcel Energy of Colorado (Xcel) provides electricity. The Xcel East Substation, located at the intersection of Colfax Avenue and I-225, provides electrical power to the base through 13.2 kilovolt (kV) overhead distribution lines. In FY02, the facilities at Buckley AFB used approximately 98,952,436 kilowatt-hours (kWh) of electricity (Buckley AFB, 2004a).

3.6.5 Natural Gas

Natural gas is provided to Buckley AFB through a gas main beneath 6th Avenue. The regional natural gas system has a capacity of 130 billion cubic ft (ft^3). In FY02, Buckley AFB used approximately 134.4167 million cubic feet ($mmft^3$) of natural gas (Buckley AFB, 2004a).

3.7 BIOLOGICAL RESOURCES

3.7.1 Plant Communities

The dominant plant communities at Buckley AFB are listed on Table 3.4, along with the acreage and percentage of the installation occupied by each plant community. Figure 3.3 depicts the distribution of the plant communities.

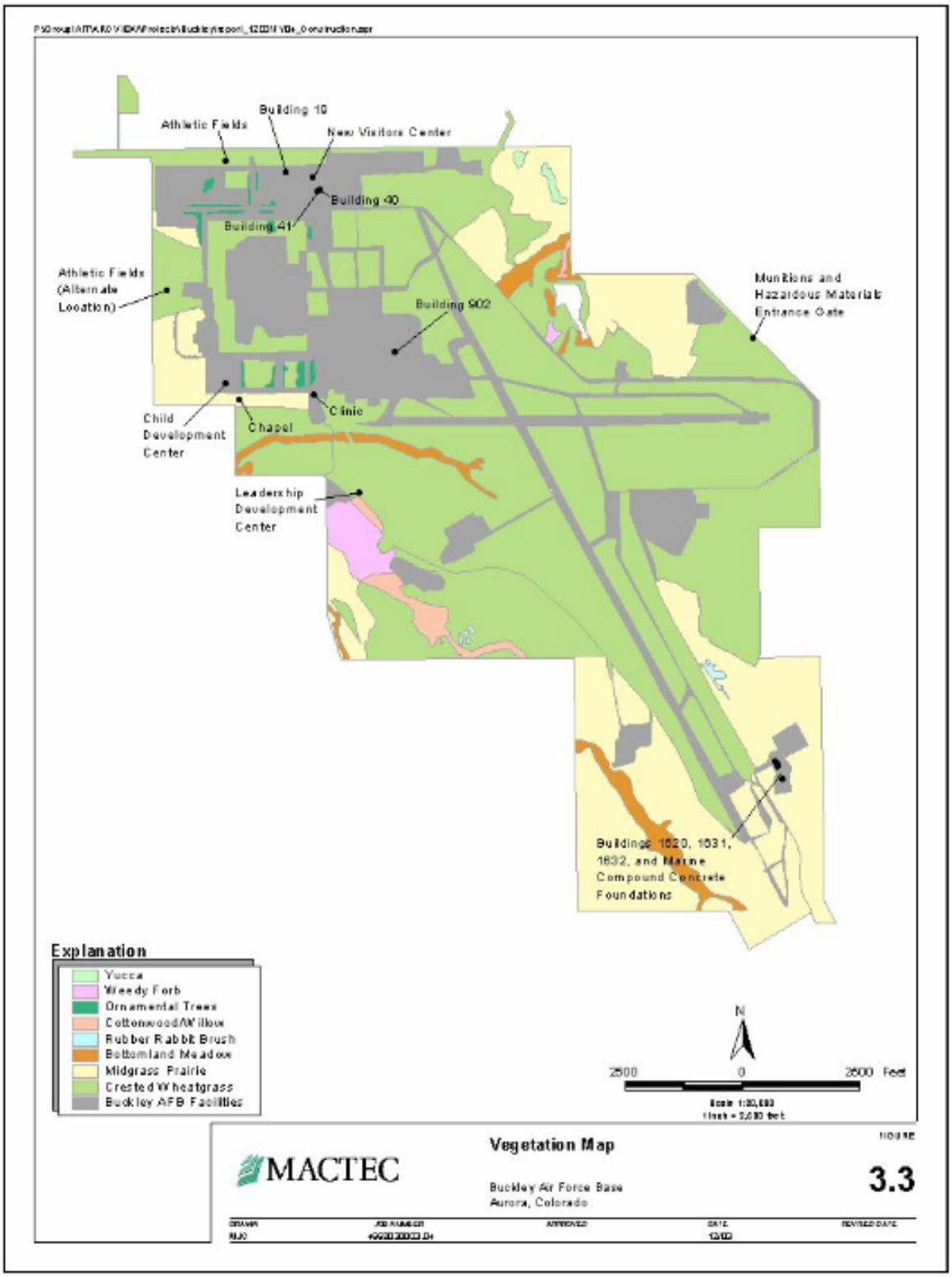
Athletic Fields
Building 10
New Visitors Center
Building 40
Building 41
Athletic Fields (Alternate Location)
Building 902
Munitions and Hazardous Materials Entrance Gate
Child Development Center
Chapel
Clinic
Leadership Development Center
Buildings 1020, 1031, 1032, and Marine Compound Concrete Foundations
Explanation
Yucca
Weedy Forb
Ornamental Trees
Cottonwood/Willow
Rubber Rabbit Brush
Bottomland Meadow
Midgrass Prairie
Crested Wheatgrass
Buckley AFB Facilities
N
2500
0
2500 Feet
MACTEC
Vegetation Map
Buckley Air Force Base
Aurora, Colorado
3.3

Table 3.4 Buckley Air Force Base Plant Communities		
Plant Community	**Total Acres**	**Percentage of Installation**
Bottomland Meadow	80.3	2.3
Cottonwood/Willow	30.7	0.9
Crested Wheatgrass	1,738.3	49.7
Mixed Grass Prairie	759.7	21.7
Ornamental Trees	19.4	0.6
Rabbitbrush	3.6	0.1
Weedy Forb	34.9	1.0
Yucca	5.0	0.1
Other Landscape Types*	827.2	23.6
Total	**3,499.1**	**100.0**

* Includes Buckley AFB facilities (818.8 acres) and water (8.4 acres).

3.7.2 Site-specific Plant Communities

Site specific plant communities for the 15 projects in the Proposed Action are listed in Table 3.5. Figure 3.3 shows the location of the Proposed Construction II construction projects overlain on existing plant communities.

Table 3.5 Proposed Construction II Project Specific Plant Communities				
Project	**General Location**	**Construction Footprint (acres)***	**Existing Plant Community/Habitat**	**Dominant Plant Species**
1. Construct Athletic Fields	Northern Boundary of Installation	9.15	Noxious Weeds	Kochia, Russian thistle Prairie sunflower Goosefoots
2. Construct Chapel	South of A-Basin Avenue	5.04	Weedy Crested Wheatgrass Prairie	Western Wheatgrass Prairie Sunflower Prairie Plantain Wedge Grass Cheat Grass
3. Construct Child Development Center	Between Breckenridge and A-Basin Avenues	4.70	Noxious Weeds	Morning Glory Chinese Elm
4. Construct Clinic	Southwest corner of Aspen and A-Basin Avenues	2.38	Weedy Lawn	Kochia Alfalfa

Table 3.5 Proposed Construction II Project Specific Plant Communities

Project	General Location	Construction Footprint (acres)*	Existing Plant Community/Habitat	Dominant Plant Species
5. Construct Leadership Development Center	West-central boundary of Installation, adjacent to west side of Aspen Avenue	7.71	Weedy Crested Wheatgrass Prairie	Western Wheatgrass Plains Saltgrass Alfalfa
6. Construct Munitions and Hazardous Materials Entrance Gate	East of Snowmass Street on the eastern installation boundary	0.52	Weedy Crested Wheatgrass Prairie Includes portion of Shelterbelt	Crested Wheatgrass Kochia Cheat Grass Western Wheatgrass
7. Construct New Visitors Center	Northeast boundary of installation	0.52	Weedy short-grass Prairie and Turfgrass (on existing ball field)	Buffalo Grass Fescue Golden Aster
8. Demolish Building 19 (Camana Club)	Northern boundary of installation between Copper Mountain Street and Aspen Avenue	0.33	Bare Ground and Mixed-Weeds	Bluegrass varieties
9. Demolish Building 40 (Guard Station)	Northern boundary of installation, south of the 6th Avenue/Aspen Avenue intersection.	0.02	Bluegrass lawn, recently installed landscaping features and young trees.	Same as above.
10. Demolish Building 41 (Visitors Center)	Same as above.	0.04	Same as above.	Same as above.
11. Demolish Building 902 (Old Base Exchange)	North side of Breckenridge Avenue east of Aspen Avenue	0.26	Bare Ground/Asphalt Weeds	Bindweed
12. Demolish Building 1620 (Radar Relay Building)	Southeast corner of installation	0.07	Weedy Mixed Grass Prairie	Kochia Western Wheatgrass Crested Wheatgrass
13. Demolish Building 1631 (Electrical Shop)	Southeast corner of installation	0.14	Weedy Mixed Grass Prairie	Same as above.

Table 3.5 Proposed Construction II Project Specific Plant Communities

Project	General Location	Construction Footprint (acres)*	Existing Plant Community/Habitat	Dominant Plant Species
14. Demolish Building 1632 (Reserve Force Building)	Southeast corner of installation	0.03	Weedy Mixed Grass Prairie	Same as above.
15. Demolish Marine Compound Concrete Foundations	Southeast corner of installation	0.07	Weedy Mixed Grass Prairie	Same as above.

* Construction footprint includes maximum assumed building area, with contingency for contractor lay-down and preparation areas.

Of the 15 project sites, seven are located in weedy, crested wheatgrass prairie habitat, an estimated 15.07 acres; three are bluegrass lawn, an estimated 0.39 acres; two are located in areas dominated noxious weeds, an estimated 12.75 acres; and one project in each: weedy short-grass prairie, 1.85 acres; weedy lawn, 3.06 acres; and weedy bare ground, 0.26 acres.

3.7.3 Noxious Weeds

Noxious weeds are alien plant species that are very aggressive invaders, and are hard to decrease once they have established themselves. Air Force Instruction (AFI) 32-1053 Pest Management specifies that noxious weeds must be managed at Air Force installations and the Colorado Weed Management Act requires counties to control noxious weeds (Colorado Department of Agriculture 2001). Noxious weed species occurring at Buckley AFB are listed in Table 3.6.

Table 3.6 Noxious Weeds Found at Buckley AFB

Scientific Name	Common Name	Project Sites Where Observed
Acosta diffusa	Diffuse knapweed	
Aegilops cylindrical	Jointed goatgrass	
Anisantha tectorum	Cheatgrass	
Bassia seversiana	Kochia	Munitions and Hazardous Materials Gate, Expanded Clinic, Chapel Buildings 1620, 1631, 1632, and Marine Compound Concrete Foundations
Breea arvensis	Canada thistle	

Table 3.6 Noxious Weeds Found at Buckley AFB

Scientific Name	Common Name	Project Sites Where Observed
Carduus nutans	Musk thistle	
Convolulus arvensis	Bindweed	Child Development Center, Buildings 902, 1620, 1631, 1632, and Marine Compound Concrete Foundations
Descurania Sophia	Tansy mustard	
Euphorbia esula	Leafy spurge	
Linaria dalmatica	Dalmatian toadflax	
Linaria vulgaris	Yellow toadflax	
Onopordum acanthium	Scotch thistle	
Salsola sp.	Russian thistle	
Tamarisk ramosissima	Saltcedar	
Verbascum thapsus	Mullein	

3.7.4 Site-Specific Wildlife

Site specific wildlife observations were made during two visits to the 15 project locations. Project areas consist of weedy mixed grass prairie habitat, weedy short-grass prairie, noxious weeds, weedy bare ground, or developed sites with lawns or weedy lawns as discussed in Section 3.7.2, Site Specific Plant Communities. Table 3.7 below lists wildlife observed, and/or characteristic of, each project location based on observations and existing habitat. Of note is the presence of black-tailed prairie dogs at the following nine project areas:

- Chapel
- Child Development Center
- Clinic
- Leadership Development Center
- Munitions and Hazardous Materials Gate
- Building 1620
- Building 1631
- Building 1632
- Marine Compound Concrete Foundations

The black-tailed prairie dog is abundant throughout Buckley AFB, and in addition, its presence at project sites creates habitat for the burrowing owl that is present during the

non-winter months. Site-specific surveys for burrowing owl have not been conducted for the Proposed Construction II construction project sites; however field surveys of selected black-tailed prairie dog wards at Buckley AFB have not located this species at any of the Proposed Action project sites. The nearest known burrowing owl occurrence is a 2002 sighting approximately 1,000 feet west of the Building 1620 area (BAFB 2003b).

Table 3.7 Wildlife Observed or Characteristic At Buckley AFB

Project	General Location	Construction Footprint (acres)	Characteristic (Expected) Wildlife	Observed Wildlife
1. Construct Athletic Fields	Northern Boundary of Installation	9.15	Black-billed Magpie Starling American Crow Deer Mouse	Black-billed Magpie
2. Construct Chapel	South of A-Basin Avenue	5.04	Swainson's Hawk Red-tailed Hawk Black-tailed Prairie Dog Burrowing Owl Deer Mouse Horned Lark Desert Cottontail	Swainson's Hawk Western Meadow lark Black-tailed Prairie Dog
3. Construct Child Development Center	Between Breckenridge and A-Basin Avenues	4.70	Swainson's Hawk Black-tailed Prairie Dog Deer Mouse House Finch Kestrel	Black-tailed Prairie Dog
4. Construct Clinic	Southwest corner of Aspen and A-Basin Avenues	2.38	Robin Deer Mouse Starling	Black-tailed Prairie Dog adjacent
5. Construct Leadership Development Center	West-central boundary of Installation, adjacent to west side of Aspen Avenue	7.71	Same as Chapel above	Black-tailed Prairie Dog
6. Construct Munitions and Hazardous Materials Gate	East of Snowmass Street on the eastern installation boundary	0.52	Same as Chapel above	Black-tailed Prairie Dog

Table 3.7 Wildlife Observed or Characteristic At Buckley AFB

Project	General Location	Construction Footprint (acres)	Characteristic (Expected) Wildlife	Observed Wildlife
7. Construct New Visitors Center	Northeast boundary of installation	0.52	American Crow Raven Red-tailed Hawk Deer Mouse Black-billed Magpie Starling	Red-tailed hawk Black-billed magpie American Crow Starling
8. Demolish Building 19 (Camana Club)	Northern boundary of installation between Copper Mountain Street and Aspen Avenue	0.33	Robin Starling House Sparrow House Finch	House sparrow Robin
9. Demolish Building 40 (North Gate Guard House)	Northern boundary of installation, south of the 6th Avenue/Aspen Avenue intersection.	0.02	Robin Red-tailed hawk Black-billed magpie American Crow Starling	Red-tailed hawk Black-billed magpie American Crow Starling
10. Demolish Building 41 (North Gate Visitors Center)	Same as above.	0.04	Same as above.	Same as above.
11. Demolish Building 902 (Old Base Exchange)	North side of Breckenridge Avenue east of Aspen Avenue	0.26	Black-tailed Prairie Dog	Small colony of Black-tailed Prairie Dogs located to the north and northeast.
12. Demolish Building 1620 (Radar Relay Building)	Southeast corner of installation	0.07	Black-tailed prairie dog Burrowing owl Western Meadowlark Horned lark Several raptors Western fence lizard Plains garter snake Bull snake Prairie rattlesnake	Black-tailed Prairie Dog Western Meadowlark Deer Mouse Kestrel Red-tailed hawk Swainson's hawk Horned lark Western fence lizard
13. Demolish Building 1631	Southeast corner of installation	0.14	Same as above.	Same as above.
14. Demolish Building 1632	Southeast corner of installation	0.03	Same as above.	Same as above.
15. Demolish Marine Compound Concrete Foundations	Southeast corner of installation	0.07	Same as above.	Same as above.

3.7.5 Threatened/Endangered Species and Species of Special Concern

Air Force Instruction 32-7064 instructs Air Force Installations to protect and conserve federally listed Threatened/Endangered plants and animals and their habitats. When practical, the same protection is given to federal and state candidate species (USAF, 1997b). Several species that are protected or candidates for protection under the Endangered Species Act of 1973 (ESA) and/or the Colorado Nongame, Endangered, or Threatened Species Conservation Act (CONETSCA) exist at Buckley AFB. These species are listed in Table 3.8 along with rare, but unprotected species that are known to occur, or have habitat and could occur at Buckley AFB.

Table 3.8 ESA and CONETSCA Species Occurring or Potentially Occurring At Buckley AFB[1]

Scientific Name	Common Name	CNHP Ranking[2]	Regulatory Status[3]	Known To Exist at Project Sites
Amphibians				
Rana pipiens	Northern Leopard Frog	Not Tracked	SC	No water habitat at Project sites.
Birds				
Athene cunicularia	Burrowing owl	G4/S4B	ST	Potentially exists at several project sites.
Buteo regalis	Ferruginous Hawk	G4/S3B,S4N	SC	Potentially a causal visitor.
Charadrius melodus	Piping Plover	G3/S1B	FT	No habitat, but affected by upstream water depletions.
Charadrius montanus	Mountain Plover	G2/S2B	SC	Not known on Installation.
Grus Americana	Whooping Crane	G1/SNAN	FE, SE	No habitat, but affected by upstream water depletions.
Haliaeetus leucocephalus	Bald Eagle	G4/S1B,S3N	FT, ST	Could occur incidentally during Winter.
Lanius ludovicianus	Loggerhead Shrike	Not Tracked	SC	Occurs at installation incidentally.
Sterna antillarum athalasssos	Interior Least Tern	G4/S1B	FE, SE	No habitat, but affected by upstream water depletions.

Table 3.8 ESA and CONETSCA Species Occurring or Potentially Occurring At Buckley AFB[1]

Scientific Name	Common Name	CNHP Ranking[2]	Regulatory Status[3]	Known To Exist at Project Sites
Strix occidentalis lucida	Mexican spotted owl	G3T3/S1B,SUN	FT, ST	No habitat.
Insects				
Euphilopes rita coloradensis	Colorado blue	G4T2T3/S2		Host plant (wild buckwheats) are available on installation. Unknown if host plants exist at project sites.
Hesperia ottoe	Ottoe skipper	G3G4/S2		No habitat.
Ischura barberi	Desert forktail	G4/SU		Unknown
Sympertrum costiferum	Saffron-bordered meadowfly	G5/S1		Unknown
Fish				
Scaphirhynchus albus	Pallid Strugeon	Not listed for Colorado.	FE	No habitat, but affected by upstream water depletions.
Mammals				
Cynomys ludovicianus	Black-tailed prairie dog	G4/S4	C/SC	Exists at 8 of 13 project locations.
Mustela nigripes	Black-footed ferret	G1/S1	E/SE	Does not exist at project sites.
Perognathus fasciatus infraluteus	Olive-backed pocket mouse	G5TNR, S2		Installation within Front Range distribution. Potential habitat in vicinity of Marine Compound and Chapel.
Vulpes velox	Swift fox	G3/S3	SC	Not known to exist on the installation.
Zapus hudsonius preblei	Preble's Meadow Jumping Mouse	G5T2/S1	FT/ST	Not likely to occur. Based on trapping survey with USFWS concurrence.
Mollusks				
Anodonta grandis	Giant Floater	G5/S1		Not known to exist on the installation.
Plants				
Ambrosia linearis	Plains ragweed	G2/S2		Not currently known from Arapahoe County.

Table 3.8 ESA and CONETSCA Species Occurring or Potentially Occurring At Buckley AFB[1]

Scientific Name	Common Name	CNHP Ranking[2]	Regulatory Status[3]	Known To Exist at Project Sites
Asclepias uncialis	Dwarf mildewed	G3T1T2/S1S2		Not known to exist on the installation.
Eustoma russelianum	Showy prairie gentian	G5/S3		Not known to exist on the installation.
Gaura neomexicna var. *coloradensis*	Colorado butterfly plant	G4T2/S1	FT	Not known to exist on the installation.
Hypoxis hirsute	Yellow stargrass	G5/S1		Generally not known from Arapahoe County.
Ribes americanum	American currant	G5/S1		Not known to exist on the installation.
Spiranthes diluvialis	Ute's ladies tresses	G2/S2	FT	Not known to exist on the installation.
Viola pedatifida	Prairie violet	G2/S2		Not known to exist on installation.
Plant Communities				
Populus deltoids ssp. *Monilifera – Salix amygdaloides/Salix exigua*	Plains cottonwood riparian woodland	G2G3/S1		Occurs in portions of installation waterways, but not known to exist on installation.
Heterstipa (*Stipa*) *comata*	Mixed grass prairie	G2/S2		Not known to exist on the installation.

(1) Sources: CNHP, 2000; Buckley AFB, 2002b; The Colorado Rare Plant Technical Committee, 1999; USFWS, 2003.

(2) Colorado Natural Heritage Program Ranking Scheme as follows:
- S1 = critically imperiled in the state (five or fewer occurrences)
- S2 = imperiled in the state (6 to 20 occurrences)
- S3 = vulnerable throughout the state or found locally in a restricted range (21 to 100 occurrences)
- S4 = apparently secure in state, though may be rare in parts of range, especially periphery
- SH = historically known, but not verified for an extended period
- S#B = refers to breeding season rareness
- S#N = refers to non-breeding season rareness
- SAN = refers to non-breeding accidental occurrence in the state
- SZN = non-breeding season rareness where no consistent location for non-breeding or migratory populations can be discerned
- G= Global ranking; G#Q= uncertainty regarding global status and taxonomic status.
- NA=Does not apply

(3) FC = Federal endangered species candidate; FE = Federal endangered species; FP = Federal proposed endangered species; FT = Federal threatened species; SC = state species of concern; SE = state endangered species; ST = state threatened species.

(4) USFWS, 2002.

Of the 29 species and two plant communities listed in Table 3.8 only one species, the black-tailed prairie dog, is known to exist at Proposed Action project sites, and one species, the burrowing owl, may occur in association with the black-tailed prairie dog. Although potential habitat for the Preble's meadow jumping mouse (*Zapus hudsonius preblei*) occurs at Buckley AFB, field trapping in these areas did not locate the mouse and the USFWS has concurred that this species is not likely to occur at Buckley AFB (USFWS, 2002).

3.8 TRAFFIC

Buckley AFB is located in the Denver metropolitan area, along the Front Range of the Rocky Mountains. Major vehicle routes traverse through Denver including I-70, I-25, and I-76. Branching off I-70 to the west of the base is I-225, which runs north-south through the city of Aurora. Intersecting with I-225 in the city of Aurora and running east-west are two major arteries, 6th Avenue and Mississippi Avenue. These two roads serve as the main routes into Buckley AFB through the North and South gates. In addition, E-470 Toll Highway (E-470) provides an alternative beltway route around the eastern half of the Denver metropolitan area, and is located to the east of Buckley AFB. E-470 extends in a north to south direction in the vicinity of Buckley AFB, and is located approximately 0.75 miles from the eastern boundary of the base. Two exits of E-470 could potentially be impacted by the Proposed Action. These exits are number 19, at 6th Avenue Parkway and 16, at Jewell Avenue.

3.8.1 North and Telluride Gates

3.8.1.1 Off-Base Traffic

There are two primary entrance gates to Buckley AFB along the northern boundary. The North Gate is located to the south of a primary artery, 6th Avenue, which runs adjacent to the northern boundary of the base. The North Gate is open 24 hours per day and provides access to Aspen Avenue on-base. The North Gate sees approximately 655 peak morning hour (between 6:30 and 7:30 am) inbound vehicles (Buckley AFB, 2003c). The new Telluride Gate is also located to the south of 6th Avenue, east of the Main Gate,

and is currently operated between 8:00 am and 8:00 pm Monday through Saturday and 8:00 am and 6:00 pm on Sundays (hours are subject to change). Since the Telluride Gate was recently completed no inbound vehicle data is available, but 200 to 250 peak morning hour inbound vehicles were estimated (Buckley AFB, 2003c). West of the Main and Telluride Gates, on 6th Avenue, the number of vehicles during the peak evening traffic hour (5:00 to 6:00 pm) is approximately 1,300 vehicles per hour. Traffic accessing the North and Telluride Gates via E-470 would exit at exit number 19. Current traffic flow entering and exiting E-470 at exit 19 averages 300 vehicles per day (Parsons Brinckerhoff/Felsburg Holt and Ullevig [PBFH&U], 2002). East of the gates on 6th Avenue, the number of vehicles during the peak evening traffic hour is 400 vehicles per hour (USAF, 2000a). This value includes traffic that would have exited E-470 at exit number 19.

The Proposed Construction II projects would not affect the Telluride Gate. Therefore, traffic impacts at this gate and the off-base arteries that provide access to it will not be evaluated further in this EA.

3.8.1.2 On-Base Traffic

At the North Gate, 6th Avenue intersects with Aspen Avenue, the most heavily traveled road on base. Aspen Avenue has average daily traffic ranging from 3,000 vehicles per day in the central base area to 500 vehicles per day in the less traveled areas of base (USAF, 2000b). The Telluride Gate provides access to Telluride Street on-base, and is designed primarily as a limited use gate for accessing the Base Exchange (BX) and commissary. Traffic volumes at the North Gate may have decreased in the recent past, due to the opening of the Telluride Gate.

3.8.2 South Gate

3.8.2.1 Off-Base Traffic

The South Gate, is located to the north of Mississippi Avenue, which runs adjacent to the southern boundary of the base. This gate provides access to Aspen Avenue at the southern boundary of the base and is open from 5:30 am to 7:30 pm. Approximately 780

peak morning hour inbound vehicles pass through the South Gate (Buckley AFB 2003c). The South Gate receives all commercial vehicles (e.g., construction vehicles). West of the South Gate, Mississippi Avenue is a four-lane divided boulevard with 700 vehicles per hour on the road during peak traffic hours (USAF, 2000b). Traffic accessing the South Gate via E-470 would exit at exit number 16. Current traffic flow exiting E-470 at exit 16 averages 2,900 vehicles per day (PBFH&U, 2002).

The Proposed Construction II construction and demolition projects would affect off-base traffic at the South Gate, as there would be an increase in construction and delivery vehicles coming onto the base. Operation of the Proposed Construction II project buildings and facilities may or may not have affects on traffic at the South Gate, depending on where personnel live.

3.8.2.2 On-Base Traffic

At the South Gate, Mississippi intersects with South Aspen Street. The Proposed Construction II construction and demolition projects and operation of completed buildings and facilities would affect on-base traffic at the South Gate, as the increase in construction and delivery vehicles and personal vehicles (dependant on residence location) will increase traffic on on-base arteries from this access point.

3.9 WATER RESOURCES

Water resources analyzed in this section include the watershed and aquifers associated with Buckley AFB, which is located within the South Platte River drainage basin. East Toll Gate Creek, Sand Creek, and Murphy Creek drain the installation. Williams Lake, located in the northeast portion of the installation, is the largest body of surface water at Buckley AFB. The Proposed Construction II project sites are relatively flat with little noticeable slope in any direction. However, several proposed sites are bounded by existing roadways. The roadways provide stormwater drainage through natural overland surface runoff, and man-made engineered drains, culverts and above and underground piping systems. Stormwater runoff from Buckley AFB drains to one of three streams

adjacent to the base. Details of stormwater runoff and management are provided in subsequent sections pertaining to stormwater specifically.

3.9.1 Surface Water

Buckley AFB is located within the South Platte River drainage basin. Buckley AFB generally is divided into two watershed regions. The Eastern Watershed, on the eastern side of the base, contains two drainage basins (A and D). The Western Watershed, on the western side of the base, contains two drainage basins (B and C). The Watersheds, drainage basins and corresponding pervious and impervious areas are shown below in Table 3.9.

Table 3.9 Surface Water Drainage Watershed and Basin Information

Watershed	Drainage Basin	Approximate Impervious Area (acres)	Approximate Pervious Area (acres)	Approximate Total Area (Acres)
Eastern	Basin A	48	452	500
	Basin D	132	668	800
Western	Basin B	120	330	450
	Basin C	225	1,225	1,450
Totals	Not Applicble	525	2,675	3,200

The Proposed Construction II project sites are located in each of the Watersheds. There are a total of 3,200 acres of drainage area at Buckley AFB, of which 525 acres (16.4 percent) are impervious surface. The base has extensive natural and man-made surface drainage as well as underground storm drainage lines.

3.9.2 Stormwater

Stormwater runoff from Buckley AFB drains into one of the three streams adjacent to the base. East Toll Gate Creek receives flow from the western side of the base, while Sand Creek and Murphy Creek receive flows from the eastern side of the base. Since Proposed Construction II construction and demolition sites are distributed throughout the facility (on the east and west sides of the base) potential impacts to all three of the streams that receive stormwater runoff from Buckley AFB could result from the Proposed

Action. The increase in stormwater volume would result from the reduction of pervious surfaces on the base as a consequence of building, parking lot and walking path construction. Potential environmental stormwater consequences of the Proposed Action will be assessed in Section 4, Environmental Consequences.

Stormwater throughout Buckley AFB is regulated under the USEPA Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit for Industrial Activities (COR05A13F, 12/1/2003). The NPDES permit considers all of Buckley AFB an industrial site, with the storage of hazardous materials occurring in all four drainage areas. The permit recognizes the potential for runoff contamination, authorizes the discharge of storm water associated with industrial activity, and requires annual monitoring activities (CDPHE, 1996).

3.9.3 Groundwater

There are four major bedrock aquifers that underlie Buckley AFB within the Denver Basin. These are the Denver, Upper Arapahoe, Lower Arapahoe, and Laramie-Fox Hills aquifers. The aquifers are separated by beds of shale with low permeability and are located in zones of sandstones and siltstones.

There are alluvial aquifers in the area surrounding Buckley AFB. They are the result of alluvial deposition from erosion and are associated with East Toll Gate Creek and Sand Creek. Groundwater recharges to this aquifer through direct infiltration of precipitation and irrigation water (Colorado Air National Guard [COANG], 1999).

There are six nontributary groundwater wells on base. In 1986, the base connected their system with the City of Aurora distribution system. Potable water is supplied to Buckley AFB by the City of Aurora.

3.10 RADON

Radon is an odorless, tasteless radioactive gas. It is released by the breakdown of uranium-bearing deposits. Overexposure to radon can cause lung cancer. Building materials or fill soils used in construction can emit this gas. Radon is a naturally

occurring gas in Colorado soils. The level at which the USEPA recommends consideration of radon mitigation measures is 4 picocuries per liter (pCi/L). The USAF requires that buildings be tested for radon if the structure is occupied by personnel for more than 8 hours per day. USEPA lists Buckley AFB in an area of highest potential for radon decay (greater than 4 pCi/L) (USEPA, 2003). Historically, radon levels at Buckley AFB have been between 1 and 4 pCi/L (Lancaster, Ron, 2003), which is considered in the "medium" range. Radon sampling was conducted between 1993 and 1997 at four buildings on base. The results range from 0.2 to 6.9 pCi/L (COANG, 2000). All of the sampling results, except one, were below the USEPA standard of 4.0 pCi/L. Building 600 was the exception with radon levels of 6.9 pCi/L.

Depending on the location, type of construction, and usage of the Proposed Construction II buildings, radon issues could result. Therefore radon levels may need to be considered and potential consequences will be further analyzed in Section 4, Environmental Consequences.

3.11 LEAD BASED PAINT

The use of LBP declined after 1978 when the Consumer Product Safety Commission lowered the allowable lead content in paint to 0.06 percent by weight (trace amount) from its 1973 level of 0.5 percent by weight in a dry film of newly applied paint. This change was made under the Consumer Safety Act of 1977, P.L. 101-608, as implemented by 16 CFR Part 1303. DOD implemented a ban of LBP use in 1978; however, it is possible that facilities painted prior to or during 1978 may contain LBP. The base engineer assumes that all structures constructed during or prior to 1985 potentially contain LBP.

Air Force Policy (1993) ensures that LBP hazards are abated during building renovations or demolitions. There has not been a LBP survey conducted for Buckley AFB facilities. LBP abatement is accomplished in accordance with applicable federal, state, and local regulations prior to demolition or renovation activities to prevent any health hazards.

The Proposed Action involves demolition of buildings that could contain LBP. LBP is therefore analyzed further in this EA in Section 4.

3.12 ASBESTOS

Asbestos containing material (ACM) is regulated by the USEPA and Occupational Safety and Health Association (OSHA). Emissions of asbestos fibers into the ambient air are regulated in accordance with Section 112 of the CAA, which established the National Emissions Standards for Hazardous Air Pollutants (NESHAP). The NESHAP addresses the demolition or renovation of buildings containing ACM. A basewide asbestos survey was conducted at Buckley AFB in 1999. Sampling was conducted for 169 facilities suspected of containing ACM. Of the facilities included in this survey, samples from 18 tested positive for ACM (USAF, 2000a). Access to 16 facilities was denied; therefore, the status of ACM in these structures is unknown. The remaining 135 facilities are considered asbestos-free. In addition, soil samples were taken from eleven proposed FY-04 through 07 construction sites and analyzed for asbestos in January 2003. The results were negative for asbestos.

Infrastructure, including asbestos lined pipes, was left in place during some 1950's-1960's era demolition projects. Therefore, the potential exists for either finding asbestos lined pipes or asbestos contaminated soil during construction and/or utilities trenching activities. In particular, this may be the case for the sites scheduled for the Child Development Center and the Athletic Fields, but may also apply at other construction and demolition sites. In addition to buried historical ACM that may be encountered during excavation and trenching activities, some of the structures scheduled for demolition may contain asbestos insulation and/or floor/ceiling tiles. In particular, Building 19 is believed to contain asbestos insulation. All potential consequences related to ACM will be evaluated in Section 4, Environmental Consequences.

3.13 NOISE

Noise is defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human

response to noise can vary according to the type and characteristic of the noise source, the distance between the noise source and the receptor, the sensitivity of the receptor, and the time of day. Community noise levels usually change continuously during the day, and also exhibit a daily, weekly, and yearly pattern.

Base activities that have the highest potential source for noise impacts are the aircraft/airspace operations. An AICUZ Study (COANG, 1998) plotted the day-night average sound level (DNL) from 65 to 80 decibels (Db) for a typical busy day at Buckley AFB. The DNL 65 dB contour covers the main runway, and extends approximately one mile southeast and one mile northwest over Aurora, Colorado in Arapahoe County. Most of the base is within the 65 dB contour (COANG, 1998). No noise studies were available from Buckley AFB for the Proposed Construction II project sites. It can be assumed that the activities associated with the Proposed Construction II projects would not produce noise above 65 DNL at sensitive receptors on a regular basis.

3.14 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Median income (household, family, and non-family) increased by greater than 40 percent between 1990 and 2000 in Arapahoe County (United States Census Bureau [USCB] 2003). Per capita personal income increased by approximately $9,370 to $28,147 (USCB 2003). Personal income in Arapahoe County between 1990 and 2000 increased 124 percent (Bureau of Economic Analysis [BEA] 2003). Nonfarm and farm personal income increased 124 percent to approximately $21.6 billion, and 447 percent to approximately $1.7 million, respectively, in 2000 (BEA 2003). The categories with the highest percent increase in earnings between 1990 and 2000 were State Government (325 percent); Transportation and Public Utilities (297 percent); Finance, Insurance, and Real Estate (264 percent); and Agricultural Services (211 percent) (BEA 2003). The mining industry lost earnings between 1990 and 2000 (-19.1 percent) (BEA 2003).

Total full-time and part-time employment increased 62 percent to 389,723 jobs in Arapahoe County between 1990 and 2000 (BEA 2003). The largest percentage employment gains between 1990 and 2000 were in Construction (163 percent);

Transportation and Public Utilities (130 percent); State Government (123 percent); and Agricultural Services (108 percent) (BEA 2003). Job loss was reported for Mining (-41 percent) and Farms (-15 percent) (BEA 2003).

Poverty status between 1990 and 2000 in Arapahoe County remained approximately constant at 5.8 percent below the poverty threshold (USCB 2003).

Existing environmental justice conditions were analyzed using the United States Census 2000 summary data in accordance with the methods presented in the 1997 Air Force (AF) publication: "*Guide For Environmental Justice Analysis With The Environmental Impact Analysis Procedure*" (USAF, 1997a). Using this reference the analysis determined that 5.8% of the Arapahoe County population lives below the 2000 poverty level of $ 8,794 (for an individual) or $13,738 (family of three) (U.S. Census Bureau, 2000). Of the six census tracts surrounding Buckley AFB, four exceed the 5.8% mark. Analysis of the minority constituency of Arapahoe County within the six census tracts surrounding Buckley AFB determined that minorities comprised 24.7% of Arapahoe County's population, and of these six census tracts, five exceed the 24.7% mark.

SECTION 4

ENVIRONMENTAL CONSEQUENCES

The environmental effects of the Proposed Action, Alternative Action 1, and the No Action Alternative are discussed in this section.

The degree of environmental impact associated with a Proposed Action is gauged in comparison with established effects criteria or regulatory standards. Such criteria or standards are termed "significance criteria" and are an important component of NEPA environmental consequences analyses. The concept of "significance" is important in environmental assessments because the NEPA implementing regulations state that significant impacts warrant an environmental impact statement and do not qualify for a FONSI. In order to avoid arbitrary or capricious decisions regarding the degree of impact a proposed action has on a particular resource, it is useful to establish criteria that define a significant impact to each resource being analyzed. In addition, NEPA implementing regulations require the significance of environmental effects to be analyzed in terms of their context and intensity. Context refers to the society and locale where impacts would occur. Intensity refers to the severity of the impact, and is most usefully gauged against known standards of health and environmental damage and/or change (Bass, Herson, and Bogdan, 2001).

Table 4.1 lists the 14 resource areas analyzed in this EA and defines the significance criteria used to assess the impacts described in this section of the EA. Significance criteria are often regulatory standards, such as the allowable concentration of a pollutant emitted to the atmosphere, but can also include professional judgment and qualitative indices of environmental quality.

Table 4.1: Environmental Significance Thresholds

Environmental Resource	Significance Threshold
Air Quality	• Increases in ambient air pollution concentrations from below to above any of the National Ambient Air Quality Standards (NAAQS), as calculated through a general conformity analysis of *de minmius* thresholds. • Emission increase for any criteria pollutant from a stationary source greater than five tons per year
Geology, Soils and Topography	Unmitigated construction shrink/swell soils.
Hazardous Materials	• Release of hazardous materials exceeding CERCLA EPCRA reportable quantities established in Table 302.4 of 40 CFR Part 302. • Public or on-base personnel exposure to hazardous materials thorough transport or use causing injury, illness or other physical harm. • Conditions where an accident involving the release of hazardous materials to the environment is likely to occur.
Hazardous Wastes	• Improper management of RCRA hazardous wastes. • Release of hazardous wastes exceeding CERCLA EPCRA reportable quantities established in Table 302.4 of 40 CFR Part 302. • Public or on-base personnel exposure to hazardous wastes thorough transport or disposal causing injury, illness or other physical harm. • Conditions where an accident involving the release of hazardous wastes to the environment is likely to occur.
Land Use and Aesthetics	Conflict or incompatibility of construction/demolition projects with adjacent facilities in respect to Air Force planning principals.
Utilities	• Creation of excessive demands on operational year capacity • Solid waste generation volumes that exceed landfill capacity. • Water demands exceeding permitted water rights or authorization. • Electrical or natural gas usage exceeding regional capacity.
Biological Resources	• Substantial adverse effects on any federally or state listed threatened or endangered species. • Substantial effect on a riparian or other sensitive habitat.
Traffic	• On-base traffic increases creating overloading of existing security processing lanes, safety issues, congestion, time-delays etc. • On or off-base traffic increases exceeding the remaining future flow capacity in relation to the level of service that individual roadways currently provide.
Water Resources	• Substantial stream bank erosion resulting in significant siltation impacts on water quality or aquatic habitats in the Sand Creek drainage basin. • Increases in stormwater runoff such that existing or planned stormwater drainage system capacities would be exceeded, causing surface runoff resulting in flooding on or off-site.
Radon	Exceeding USEPA defined elevated radon concentration of 4.0 pCi/l.
Lead-based paint	Exceeding CDPHE and OSHA LBP exposure standard of 50 micrograms of lead per cubic meter of air (50 µg/m^3), averaged over an 8-hour work-day, or exceeding USEPA and CDPHE RCRA hazardous waste disposal levels of 5 milligrams per liter (mg/l) for toxicity, analyzed using the Toxicity Characteristic Leaching Procedure (TCLP).
Asbestos	Exceeding CDPHE and/or OSHA asbestos exposure standards.

Table 4.1: Environmental Significance Thresholds	
Environmental Resource	**Significance Threshold**
Noise	Noise levels in excess of Buckley AFB established 65 db limit.
Socioeconomics and Environmental Justice	Adverse socioeconomic and/or environmental justice impacts on residents of communities surrounding Buckley AFB.

4.1 COMPARISON OF THE ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 4.2 compares the environmental effects of the Proposed Action, Alternative Action 1, and the No Action Alternative. Impacts are assessed for construction and demolition activities (short term) and operations of completed facilities (long term).

Table 4.2 Comparison of Environmental Consequences				
Impact Topic	**Dismissed/ Retained (per Section 3 Discussion)***	**Proposed Action**	**Alternative Action 1**	**No Action Alternative**
Air Quality	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – No Impacts	Long term – No Impacts	Long term – No Impacts
Geology, Soils and Topography	Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
Hazardous Materials	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – No Impacts	Long term – No Impacts	Long term – No Impacts
Hazardous Wastes	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – Minor Adverse Impacts	Long term – Minor Adverse Impacts	Long term – No Impacts
Utilities	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts

Table 4.2 Comparison of Environmental Consequences				
Impact Topic	**Dismissed/ Retained (per Section 3 Discussion)***	**Proposed Action**	**Alternative Action 1**	**No Action Alternative**
		Long term – Moderate Adverse Impacts	Long term – Moderate Adverse Impacts	Long term – No Impacts
Biological Resources	Retained	Short term – Moderate Adverse Impacts	Short term – Moderate Adverse Impacts	Short term – No Impacts
		Long term – Moderate Adverse Impacts	Long term – Moderate Adverse Impacts	Long term – No Impacts
Traffic	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – Moderate Adverse Impacts	Long term – Moderate Adverse Impacts	Long term – No Impacts
Water Resources	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – Moderate Adverse Impacts	Long term – Moderate Adverse Impacts	Long term – No Impacts
Radon	Retained	Short term –No Impacts	Short term –No Impacts	Short term – No Impacts
		Long term – Minor Adverse Impacts	Long term – Minor Adverse Impacts	Long term – No Impacts
Lead-Based Paint	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts
		Long term – No Impacts	Long term – No Impacts	Long term – No Impacts
Asbestos	Retained	Short term – Moderate Adverse Impacts	Short term – Moderate Adverse Impacts	Short term – No Impacts
		Long term – No Impacts	Long term – No Impacts	Long term – No Impacts
Noise	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – No Impacts

Table 4.2 Comparison of Environmental Consequences				
Impact Topic	**Dismissed/ Retained (per Section 3 Discussion)***	**Proposed Action**	**Alternative Action 1**	**No Action Alternative**
		Long term – No Impacts	Long term – No Impacts	Long term – No Impacts
Socio-economics and Environmental Justice	Retained	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts	Short term – Minor Adverse Impacts
		Long term – Moderate Positive Impacts	Long term – Minor Adverse Impacts	Long term – Minor Adverse Impacts
Floodplains	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
Airspace	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
Wetlands	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
Environmental Restoration Sites	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
Land Use and Aesthetics	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable
PCBs	Not Analyzed/ Dismissed	Not Applicable	Not Applicable	Not Applicable
		Not Applicable	Not Applicable	Not Applicable

* See Section 3 for discussion of resources not expected to be impacted by the Proposed Action, explanations of why resources would not be expected to be impacted, and Section 3.2 for dismissal of Geology, Soils and Topography.

The direct and indirect effects associated with the Proposed Action, Alternative Action 1, and the No Action Alternative are further assessed in separate sections below.

4.2 PROPOSED ACTION

4.2.1 Air Quality

The Proposed Action would affect air quality in three ways; (1) the construction and demolition activities would produce fugitive dust and pollutants from vehicle and heavy equipment exhaust; (2) the operation of new buildings and facilities would increase emissions from furnaces, hot water heaters and/or backup generators and tanks used to store fuels for these sources; and (3) increased traffic associated with use of new facilities would cause automobile emissions. In addition, ODS contained in air conditioning units for climate control would need to be properly managed to prevent releases to the atmosphere. These effects would be considered direct, as they would occur at the same time and place (i.e. point of emission from vehicle and equipment exhaust; stacks and/or vents for furnaces, hot water heaters and backup generators; and loss of ODS from HVAC systems).

4.2.1.1 Emissions from Construction and Demolition Activities

Construction and demolition activities associated with the Proposed Action would create fugitive dust emissions from the following activities:

- Ground Disturbance (scraping, bulldozing, and compacting)
- Site Grading
- Foundation Excavation
- Utilities Trenching
- Material Handling (soils, aggregate, and demolition debris/waste)
- Vehicle Travel on Paved and Unpaved Roads
- Construction
- Demolition

- Walk-way and Parking Lot Preparation
- Walk-way and Parking Lot Paving and Painting (however, asphalt paving operations are exempt from permit and Air Pollution Emission Notice (APEN) requirements by Title 5 CCR 1001-5, Regulation Number 3)
- Sidewalk Preparation and Paving
- Landscape and Turf Installation
- Miscellaneous Emissions (equipment trackout, windblown dust, etc.).

Fugitive dust emissions generated from individual Proposed Construction II projects would depend on the extent and duration that the activities listed above are performed to complete each project. For purposes of this EA, fugitive dust emissions were estimated based on the area of ground disturbance related to each construction project. Areas of ground disturbance were assumed at maximum anticipated footprint sizes, with contingency for contractor lay-down and preparation areas. Conservative assumptions related to distances required for utility trenching, vehicle travel on paved and unpaved roads, and material handling were also made for calculating emissions. Appendix A contains a table showing estimated individual construction project ground disturbance durations, areas of ground disturbance, and utilities trenching distances. Fugitive dust emissions for demolition projects were estimated based on building areas and interior structures (walls and integrated components). Estimates of total debris/waste volume generated for each demolition project were calculated and used to determine fugitive dust emissions. Demolition project data for fugitive dust emission calculations are included on the Table contained in Appendix B.

Site-grading and construction/demolition activities would not be expected to require a Land Development APEN from the CDPHE because the size of individual project land disturbance areas do not exceed the 25-acre threshold (estimated ground disturbance

areas for projects range from 0.5 to 9.2 acres) and would be unlikely to exceed the six-month threshold.

Best management practices (BMPs) that can be instituted on-site to minimize fugitive dust emissions may include the application of water or other chemical stabilizers on exposed earth surfaces, and other mitigative and preventive techniques. Water may be applied to construction roadways and earth stockpiles to control dust created through vehicle and equipment travel and operations. The following techniques have been shown to be effective for the controlling of the generation and migration of dust during construction and vehicle and equipment travel activities:

- Applying water on haul roads and other exposed earth surfaces
- Wetting equipment and excavation faces
- Spraying water on buckets during excavation and dumping
- Hauling materials in properly tarped or watertight containers
- Restricting vehicle speeds to 10 mph
- Covering excavated areas and material after excavation activity ceases
- Reducing the excavation size and/or number of excavations.

Experience has shown that utilizing the above-mentioned dust suppression techniques, within reason will not create excess water which would result in unacceptable wet conditions. Using atomizing sprays will prevent overly wet conditions, conserve water, and provide an effective means of suppressing the fugitive dust. In addition, control techniques such as chemical stabilization, or reduction of surface wind speed with windbreaks (snow fence, silt fence) or source enclosures (netting, mulching) can be employed to suppress dust generation and migration without the use of water.

Additional mitigative and preventive techniques can be employed to reduce dust generation and migration. Mitigative measures may entail the periodic removal of dust-producing materials, including periodic street and access road sweeping and expeditious clean-up of materials spilled on paved or unpaved travel surfaces. Preventive process modifications and adjusted work practices include gravelling of dirt access roads and work areas, the elimination of mud/dirt carryout on paved roads at construction sites and vehicle washing. These measures will aid in preventing or reducing the deposition of materials that could become airborne through vehicle and equipment traffic or by wind.

Combustion emissions from vehicles and heavy equipment would be generated while delivering materials to Buckley AFB, as well as from operation of equipment on-base to complete ground disturbance phase of construction and demolition projects. Emissions from vehicles used by contractor employees to drive to and from Buckley AFB must also be considered. For purposes of this EA, combustion emissions were estimated based on delivery distances for materials brought to the base, vehicle miles traveled by contractor employees to get to and from the sites and equipment operation durations related to the ground disturbance phase of each construction and demolition project. Pollutants from vehicle and heavy equipment exhaust include NO_x, CO, PM_{10}, and VOCs.

Table 4.3 shows the estimated pollutant emissions that may result from construction and demolition projects included in the Proposed Action. Fugitive dust emissions are included in PM_{10} values. The spreadsheets used to create the calculations are included in this EA as Appendix C, Construction Air Emission Calculations. All assumptions used in calculations are included in the appendix. All paving and concrete materials required to complete Proposed Construction II projects are assumed to be delivered to the site. As such, it is assumed that no equipment would be brought or operated onsite (including portable stone crushers, concrete batch plants, milling and asphalt batch plants) to complete the Proposed Action.

Table 4.3 Construction and Demolition Project Emissions	
Pollutant	**Emissions Generated from Construction and Demolition Site Disturbance Activities (Tons/Year)**
Hydrocarbons	2.0
NO_x	2.0
SO_2	0.3
CO	1.0
PM_{10}	27.0

4.2.1.2 Emissions from Completed Building and Facility Operation Activities

The only stationary source of emissions from completed buildings and facilities would be from furnaces, hot water heaters and/or backup generators that would be installed and operated as part of individual Proposed Construction II projects. Details of building heating and backup electrical generators are not known at this time. However, if these sources are installed and operated as part of the Proposed Action, the Title V permit may need to be modified to add this equipment as a new, significant or insignificant stationary distillate-fired fuel burning or internal combustion emission sources. In addition, diesel fuel tanks for any boilers or backup generators installed may need to be added to the permit as new stationary storage tank emission sources. Emission from storage tanks would be VOCs created through evaporation, tank filling and breathing losses. Emissions from boilers and backup generators would be products of combustion (NO_x, CO, SO_2, PM_{10}, and VOCs). Emission from these sources would be similar to those created from like equipment currently permitted and operating at the base. It is more likely that new buildings would be connected to existing steam lines for heating, or would be provided with natural gas-fired furnaces. Buildings would also be provided with natural gas-fired hot water heaters and air conditioning units. Emissions that are created from operation of natural gas-fired furnaces, hot water heaters and air conditioning units installed as part of the Proposed Action can be estimated assuming an increase in natural gas use. The increase in natural gas use can be estimated on the bases of new building areas. Currently, Buckley AFB installation facilities consist of

approximately 2.2 million gross ft^2 (Buckley AFB 2002a), and uses approximately 400,000 ft^3 of natural gas per day. The Proposed Action would add an additional 77,000 ft^2 of building area. Assuming a direct ratio of building areas to natural gas use, the Proposed Action would result in an increase in natural gas use of approximately 13,000 ft^3 per day, or 4.7 $mmft^3$ per year. Assuming that new furnaces, hot water heaters and air conditioning units will be sized at <0.3 million British Thermal Units per hour (mmBTU/hr) annual emission calculations for the operation of these units are shown below on Table 4.4.

Table 4.4 Heating, Hot Water and Air Conditioning Unit Air Emissions(1)

Pollutant	Emission Factor (lbs/mmcf)	Annual Emissions (Tons/Year)
CO	40.0	0.09
VOC	5.5	0.01
NOx	94.0	0.22
SOx	0.6	0.00
PM_{10}(2)	7.6	0.02

(1) Emission factors are for external combustion sources <10 mmBTU/hr that burn natural gas.

(2) Since no emission factor is provided for PM_{10}, it is assumed that total particulates equal PM_{10}.

Mobile emissions would be created through turf and landscaping maintenance. Sources may include lawn mowers and tractors, turf maintenance equipment (thatchers, aerators, etc.) and gasoline operated pruning equipment. Emissions from these sources would be NO_x, CO, SO_2, PM_{10}, and VOCs, however emission from these sources would be negligible and are not considered under the CAA Title V operating permit or the Colorado operating permit program.

4.2.1.3 Increased Traffic

The operation of the Child Development Center and expanded Clinic would increase the daily traffic flow in the ROI and on-base. The Child Development Center would be

located between A-Basin and Breckenridge Avenues, due east of the motor pool, and west of the Skills Development Center, while the Clinic would be constructed near Aspen Street and A-Basin Avenue (see Figure 2.2). The Child Development Center would be capable of accommodating 192 children. It is assumed that 20 staff personnel would be required to operate the Child Development Center (based on approximately one individual staff member for every ten children). The expanded Clinic would allow an increase of approximately 85 medical personnel (from 35 individuals in 2000 to 120 individuals in FY04). Assuming that most people would drive themselves to work at the Child Development Center and expanded Clinic, this would increase the amount of traffic on local and base roads by a maximum of 105 vehicles per day, although the actual increase would likely be less (due to public transit and carpooling). It is assumed that parents would deliver and pickup children at the beginning and end of the day to the Child Development Center. However, since the parents would already have been driving to the base for work their miles are not included in the calculation of increased personal vehicle pollutant emissions. USEPA emission factors were used to calculate the potential increase in emissions due to the Proposed Action. USEPA provides exhaust emission rates for high altitude light duty gasoline-powered vehicles. However, it does not provide emissions for PM_{10} and they are assumed to be negligible for the Proposed Action. The following assumptions were made:

- Each of the 20 Child Development Center and 85 Clinic employees would drive themselves to work daily and would not carpool,
- Each employee would live 20 miles from base and would drive 40 miles roundtrip,
- Each parent and employee would travel to Buckley AFB 260 days per year,
- Each person drives a 2000 model-year vehicle, and
- Each vehicle has been driven 50,000 miles.

Emissions from operation of personal vehicles resulting from the Proposed Action are provided below on Table 4.5.

Table 4.5 New Personal Vehicle Pollutant Emissions

Pollutant	Pollutant Emission Factor (grams/mile)	Emission Factor (pounds/mile)	Total Vehicle Miles Traveled per Day (miles/day)	Total Annual Emissions Personal Vehicles (pounds/year)(1)	Total Annual Emissions Personal Vehicles (tons/year)(1)
CO	9.387	0.021	4,200	22,578	11.3
VOC	0.544	0.001	4,200	1,308	0.7
NO_X	0.593	0.001	4,200	1,426	0.7

Based on each employee traveling to Buckley AFB 260 days per year.

In addition, some off-base personnel may make trips to Buckley AFB to participate in sports activities, or other organized events, after normal duty hours. However, traffic increases and resulting vehicular air emissions due to off-base personnel using the fields would have a minimal impact, as the number of individuals, and time of day and frequency of trips to the base would be insignificant. Although the fields may also be used for other events (i.e. concerts, tournaments, etc.), only base personnel would be allowed to attend these events (the general public would not be permitted to access these events). Therefore these events would have no or minimal impacts on air emissions.

4.2.1.4 Air Conformity Analysis

Federal actions must comply with the USEPA Final General Conformity Rule published in 40 CFR 93, Subpart B (for Federal agencies) and 40 CFR 51 Subpart W (for state requirements). The Final Conformity Rule, which took effect on 31 January 1994, requires all Federal agencies to ensure that proposed agency activities conform to an approved or promulgated State Implementation Plan (SIP) or Federal Implementation Plan (FIP). Conformity means compliance with a SIP or FIP for the purpose of attaining or maintaining the NAAQS. Specifically, this means ensuring the Federal activity does not: 1) cause a new violation of the NAAQS; 2) contribute to an increase in the frequency

or severity of violations of existing NAAQS; 3) delay the timely attainment of any NAAQS; or 4) delay interim or other milestones contained in the SIP for achieving attainment.

The rule is broken down to two definitive steps, a conformity applicability analysis; and if *de minimus* or regional significance is exceeded, a conformity determination is conducted.

The Final General Conformity Rule applies only to Federal actions in designated nonattainment or maintenance areas, and the rule requires that total direct and indirect emissions or non-attainment criteria pollutants, including ozone precursors, be considered in determining conformity. The rule does not apply to actions that are not considered regionally significant and where the total direct and indirect emissions of non-attainment criteria pollutants do not equal or exceed *de minimus* threshold levels for criteria pollutants established in 40 CFR 93.153(b). A Federal action would be considered regionally significant when the total emissions from the Proposed Action equal or exceed 10 percent of the non-attainment area's emissions inventory for any criteria air pollutant. If a Federal action meets *de minimus* requirements and is not considered a regionally significant action, then it does not have to undergo a full conformity determination.

4.2.1.5 Air Conformity Analysis for the Proposed Action

A minor increase in baseline emissions would be anticipated due to construction and operation of the Proposed Construction II projects. For purposes of analysis, it was assumed that the specific details proposed for the Proposed Action construction and demolition activities are those specified in Section 4.2.1.1. The assumed periods required for the ground disturbance phase of construction and demolition are as shown on tables contained in Appendices A and B, respectively. Sections 4.2.1.2 and 4.2.1.3 assessed emissions from completed building operations and increased traffic that would result from the Proposed Action, respectively. The annual emissions are presented in Table 4.6 and include the estimated annual emissions created through construction/demolition activities, operation of buildings and increased traffic. Values in Table 4.6 assume that

all construction/demolition activities, building operations and increased traffic occur in one year. Although this circumstance is unlikely, it represents a worst-case scenario under which the conformity analysis can be conducted. The estimated values for CO, VOC, NO_x, SO_x, and PM_{10} were determined to be less than the USEPA de minimus values and less than 10 percent of the AQCR 36 Emission inventory (see Table 4.6). A conformity determination under the CAA conformity rules is not required because 1) the Proposed Action is not regionally significant because the AQCR 36 emissions would increase by less than 10 percent, and, 2) the Proposed Action estimated emissions are below *de minimus* values as stated in 40 CFR 93.153(b). Because the Proposed Action's emissions are low, temporary (for construction activities), and insignificant, the Proposed Action would conform to the SIP and would not have a significant impact on air quality.

Table 4.6 Proposed Action Air Emissions

Pollutant	Construction/ Demolition Proposed Action Annual Emissions (Tons/Year)	Vehicle Travel Proposed Action Annual Emissions (Tons/Year)	HVAC and Hot Water Proposed Action Annual Emissions (Tons/Year)	Total Proposed Action Annual Emissions (Tons/Year)	AQCR 36 Emission Inventory (Tons/Year) (1)	De minimus Values (Tons/Year) (1)	Above/ Below De minimus
CO	1.0	11.3	0.09	12.4	439,095	100	Below
VOC	2.0	0.7	0.01	2.7	185,055	100	Below
NOx	2.0	0.7	0.22	2.9	114,245	100	Below
SOx	0.3	0	0.00	0.3	65,700	100	Below
PM_{10}	27	0	0.02	27.0	25,550	100	Below

(1) CAQCC, 2000, 2001a, 2001b

4.2.1.6 ODS Management Requirements

Due to potential environmental concerns related to ozone depletion, regulations for proper management of ODS have been developed. The regulations were previously presented in Section 3.1.2, Ozone Depleting Substances. Buckley AFB and contractors involved in installation of air conditioning units would need to comply with the regulations listed in Section 3.1.2, as applicable.

ODS containing equipment at Buckley AFB is currently serviced and maintained by a certified HVAC personnel or contractors. New HVAC equipment containing ODS installed and operated as part of the Proposed Action would be serviced and maintained per the existing practice. Certified HVAC personnel or contractors would be required to follow appropriate ODS regulations for new equipment including:

- Add new air conditioning units exceeding the 50 lbs refrigerant threshold to the inventory of appliances containing ODS refrigerants in excess of 50 lbs (40 CFR 82.166(k)).

- Maintain records of ODS refrigerants purchased for use at the facility (40 CFR 82.166(k)).

- Maintain records of ODS equipment leaks (calculations of leak rates and percentages) and repairs (40 CFR 82.156(i)(2)).

4.2.2 Hazardous Materials

Hazardous materials used during construction of the Proposed Construction II projects would include fuels, oils, lubricants and coolants used to operate vehicles and equipment, as well as concrete joint sealants, and paints required for foundations and building construction. Hazardous waste may be generated through use of hazardous materials during construction activities. However, the potential quantity and the exact nature of the materials or wastes generated are unknown. In general, hazardous wastes and materials generated during construction and demolition activities would be managed according to

all relevant regulations. LBP, and asbestos wastes could also be generated through the process of utilities trenching or building, and structure demolition projects. Proper management of hazardous materials and wastes would potentially result in direct effects only. Additional details on hazardous waste management are provided below in Section 4.2.3, Hazardous Wastes.

The only hazardous materials that would be used during the operation of the Proposed Construction II facilities would be ODS in air conditioning units, diesel fuel that may be stored and used to supply fuels to boilers and/or emergency backup generators, and an increase in medical materials and supplies used in the expanded Clinic. Proper management of ODS is detailed in Section 4.2.1.6, ODS Management Requirements. Medical materials used at the expanded Clinic would be managed per existing practices at the Clinic.

No significant impacts related to hazardous materials would be expected from implementation of the Proposed Action.

4.2.3 Hazardous Wastes

Hazardous wastes generated through Proposed Construction II demolition projects could include LBP, and asbestos wastes or wastes generated through use and subsequent need for disposal of hazardous materials used during construction activities. However, the potential quantity and the exact nature of the materials or wastes generated are unknown. In general, hazardous wastes and materials generated during construction and demolition activities would be managed according to all relevant regulations. Hazardous wastes would not be expected to be generated through operation of the proposed buildings and facilities.

If appropriate BMPs and sound designs are employed, adherence to all federal, state, and local regulations dealing with hazardous wastes and materials are followed no significant impacts related to solid and hazardous wastes would be expected from implementation of the Proposed Action. Proper management of hazardous wastes would potentially result in direct effects only.

4.2.4 Utilities

4.2.4.1 Water supply

Several Proposed Construction II projects involve the construction of buildings and other facilities (Athletic Fields) that would require permanent and continuous availability of water. In most cases, underground water supply lines would need to be run from existing laterals and mains and be connected to new structures. The distance water supply lines would need to be run would depend on the location of the proposed facility and the location of the nearest feasible tie-in to an existing water supply line.

Proposed Construction II projects would require water for construction of buildings and other facilities. Water may be used for dust suppression at construction and demolition sites during ground disturbance activities. Since most if not all Proposed Construction II construction projects would include installation of bathroom, and in some cases, kitchen facilities, operational water use would occur once the structures are completed and occupied. Water would also be used for landscaping irrigation and irrigation of the Athletic Fields.

The increase in water use during the ground disturbance phase of construction and demolition activities for dust suppression would depend on the following factors:

- Duration and area of land disturbance
- Temperature
- Humidity
- Wind direction and speed
- Soil characteristics (size, density, moisture content), and
- Frequency, duration and volume of natural precipitation events.

Details of methods and techniques that can be employed to reduce the creation and migration of dust from the ground disturbance phase of construction and demolition activities were previously presented in Section 4.2.1.1. Estimates of increased water use can be made assuming that water suppression is the only technique practiced at construction and demolition sites. To make estimates the following assumptions were made:

- Water would be sprayed on exposed earth surfaces via water spray truck or through hoses with atomizing nozzles

- The duration of ground disturbance for construction projects and areas of disturbance are assumed to be the Project Ground Disturbance Duration and Total Land Disturbance values, as calculated and presented in Appendix A

- The duration of ground disturbance for demolition projects and areas of disturbance are assumed to be the Project Ground Disturbance Duration and Total Building Land Disturbance values, as calculated and presented in Appendix B, and

- Water is applied to exposed areas of disturbance at a rate of 500 gallons/acre/day. This value includes water applied to stockpiles and natural precipitation is not considered in the calculations.

The estimated increase in water use from the Proposed Action if water suppression is the only technique practiced at construction and demolition sites would be 1,111,728 gallons. Appendix D contains a table that presents individual construction and demolition projects and associated water use for dust suppression.

Operational water use increases resulting from occupation of completed buildings can be estimated by assessing the increase in the number of individuals that would be present on the base as a result of implementing the Proposed Action. The day-time base population would increase by a total maximum of 297 individuals (192 children and 20 instructors at the Child Development Center and 85 medical professional at the expanded Clinic) as a result of the Proposed Action. Assuming a water consumption rate of 100

gallons per day per person and 260 on-base days per year, the estimated water use increase resulting from the operation of the Child Development Center and expanded Clinic would be 7,722,200 gallons per year.

Permanent water use increases would also result from landscaping irrigation and irrigation of the Athletic Fields. To make water use increase estimates for irrigation the following assumptions were made:

- Landscaped and irrigated areas associated with buildings are 10 percent of the building size (square footage)
- The entire area of the Athletic Fields would be irrigated
- Irrigation would occur from April 1 through September 30 annually, for a total of 183 days
- Irrigation rates are 41,000 gallons/acre/week
- Irrigation rates for turf and landscaped areas are identical.

Using these assumptions the water use increase at Buckley AFB for irrigation purposes would be 7,588,800 gallons per year.

As a result of implementing the Proposed Action, water use at Buckley AFB would increase moderately in the short-term, due to construction/demolition activities. However, occupation and operation of completed facilities would create a long-term increase in annual water usage of 15,311,000 gallons per year (from 102,448,000 gallons per year in FY02 to a projected 117,759,000 gallons per year). Buckley AFB currently purchases "purple", or reclaimed water from the City of Aurora. This water is used instead of potable water when it can be safely be substituted. Buckley will seek to use recycled purple water for appropriate applications related to construction/demolition activities and operation of completed facilities. The anticipated increase in water use

resulting from implementing the Proposed Action would be considered a direct effect, and would not create a significant impact on water supply.

4.2.4.2 Wastewater Treatment

Several Proposed Construction II projects involve the construction of buildings and other facilities (Athletic Fields) that would include bathrooms and kitchens. These facilities would be provided with continuous water supply and would also require sanitary sewer disposal connections. As with water supply connections, underground sewer lines would need to be run from new structures and be connected to existing laterals and mains. The distance sewer lines would need to be run would depend on the location of the proposed facility and the location of the nearest feasible tie-in to an existing sewer line.

Proposed Construction II projects would not be expected to generate significant quantities of wastewater though construction and demolition of buildings and other facilities. Contractors are typically required to supply self-contained portable sanitary facilities for on-site workers and have the wastes generated pumped out and treated off-site. Contracts for projects should be written such that contractors are required to supply sanitary facilities and handle the wastes generated in an appropriate manner.

As with water use, operational wastewater generation resulting from occupation of completed buildings (bathroom and kitchen facilities) can be estimated by assessing the increase in the number of individuals that would be present on the base as a result of implementing the Proposed Action. The day-time base population would increase by a total maximum of 297 individuals. A conservative assumption would be that 100 percent of the water consumed would be discharged as wastewater. Under this assumption, wastewater generation and discharges would increase by 7,722,200 gallons per year, as calculated above in Section 4.2.4.1 occupation of completed facilities would create a negligible long-term increase in annual wastewater generation. The anticipated increase in wastewater generation and discharge resulting from implementing the Proposed Action

would be considered a direct effect, and would not create a significant impact on wastewater treatment.

4.2.4.3 Solid Waste

Solid waste generation would increase due to both construction and demolition projects as well as operations of new facilities. Demolition of buildings and other structures would generate considerable amounts of solid waste, as buildings, roofs, interior walls and permanently installed contents (integrated storage units, lockers, cabinets, kitchen and bathroom fixtures, etc.) would be demolished and need to be handled appropriately as solid wastes. In addition, construction projects would generate wastes through packaging of materials delivered to and used on the site, excess and unusable materials resulting from construction activities, and general trash and debris associated with construction projects. Typically, contractors are required to arrange for solid waste disposal within contracts written and issued for the work. Contracts for projects should be written such that contractors are required to arrange for proper on-site solid waste management (obtaining appropriate waste storage containers and maintaining housekeeping) and handle the wastes generated in an appropriate manner.

Recycling of discarded construction and demolition materials should be considered within the scope of the Proposed Action. Materials that may be recycled include metal, wood, concrete, and asphalt (paving and roofing tiles). Requests for proposal and contracts for construction demolition activities should be written to encourage recycling. Contractors would need to segregate materials and use qualified haulers and recycling facilities to accomplish recycling goals.

Although recycling should be considered and implemented to the extent possible, for the purposes of this EA the volume of solid waste generated as a result of the Proposed Action will be calculated and assumed to be disposed of at a permitted solid waste landfill. The exact nature and quantity of solid wastes that would be generated through construction and demolition activities is not known. However, demolition waste volumes can be estimated by considering the size of the building or structure. The demolished

structure itself, as well as roofs, interior walls, permanently installed contents (integrated storage units, lockers, cabinets, kitchen and bathroom fixtures, etc.), foundations, sub-base materials, side walks, and parking lots would all create solid wastes. As built drawings were obtained and consulted and site inspections were conducted to gather the appropriate information to make accurate solid waste generation estimates for demolition projects. Solid waste generation for construction projects were also determined assuming that 500 lbs of solid waste is generated per day of ground disturbance construction activity. Solid waste generation estimates from Proposed Action construction and demolition activities would total 6,902 tons. The table contained in Appendix E shows estimated construction and demolition solid waste generation resulting from the Proposed Action and assumptions made to support the calculations. Due to proximity and to limit construction and demolition costs, it is likely and assumed that the solid wastes generated though contractor activities would be disposed of at the Denver-Arapahoe Disposal Site.

Once complete, most if not all Proposed Construction II construction projects would be occupied or used by individuals. Solid wastes would be generated through operation of the facilities and would include general household-type trash and some medical wastes from the expanded Clinic. Waste containers would be provided at the facilities for collection of solid wastes. Wastes collected at new facilities would be handled by the existing private contractor and be disposed of at the Denver-Arapahoe Disposal Site.

As with water use and wastewater generation, solid waste generation resulting from occupation of completed buildings can be estimated by assessing the increase in the number of individuals that would be present on the base as a result of implementing the Proposed Action. The day-time base population would increase by a total maximum of 297 individuals and would be onsite 260 days per year. Assuming a waste generation rate of 5.0 pounds per day solid waste generation and disposal would increase by approximately 1,500 lbs per day. This value equals 195 tons of solid waste per year. Occupation of completed facilities would create a modest long-term increase in annual solid waste generation. As a result of implementing the Proposed Action, solid waste generation at Buckley AFB would increase by approximately 6,902 tons in the short-

term, due to construction/demolition activities. Occupation and operation of completed facilities would create a long-term increase in annual waste generation of 195 tons per year (from 1,500 tons per year in FY02 to a projected 1,695 tons per year). The anticipated increase in solid waste generation resulting from implementing the Proposed Action would be considered a direct effect, and would not create a significant impact on landfills (the Denver-Arapahoe Disposal Site) receiving the waste.

4.2.4.4 Electricity

Several Proposed Construction II projects involve the construction of buildings and other facilities (Athletic Fields) that would require permanent and continuous availability of electricity. In most cases electrical supply lines would need to be run from existing distribution lines and be connected to new facilities. The distance electrical lines would need to be run would depend on the location of the proposed facility and the location of the nearest feasible tie-in to existing supplies. In order to minimize potential environmental impacts (area of ground disturbance, fugitive dust and combustion emissions, etc.) from trenching activities, efforts to run multiple utilities needed for new structures and facilities in common trenches should be made and specified in requests for proposals and contracts written for individual projects.

Some electricity use increases would be expected from construction and demolition actions related to the Proposed Construction II projects. However, since most contractor equipment would be operated on gasoline and diesel powered engines, including small generators used to generated electricity on job sites, increases in electrical consumption would be negligible. Upon completion, operation of the facilities would cause moderate increases in electric use. Increased electrical demands expected from operation of completed facilities would include operation of HVAC equipment, communication equipment, computers, security systems, appliances, and general building and facility lighting. The increase in electrical use can be estimated on the bases of new building areas. Currently, Buckley AFB installation facilities consist of approximately 2.2 million gross ft^2. The Proposed Action would add an additional 77,000 ft^2 of building area. Assuming a direct ratio of building areas to electrical use, the Proposed Action would

result in an increase in electrical use of approximately 3,470,000 kWh per year , or an increase of approximately four percent. The increase in electrical use from construction/demolition and operation of completed buildings and facilities associated with the Proposed Action would be considered a direct effect, and would not be considered significant.

4.2.4.5 Natural Gas

Several Proposed Construction II projects involve the construction of buildings and other facilities (Athletic Fields) that would require permanent and continuous availability of natural gas. In most cases, underground natural gas supply lines would need to be run from existing lateral and main tie-ins and be connected to new facilities. The distance natural gas lines would need to be run would depend on the location of the proposed facility and the location of the nearest feasible tie-in to an existing natural gas supply.

As with electricity use, moderate increases in natural gas consumption would be expected from construction and demolition actions. More substantial increases in natural gas use would result from occupation and used of completed facilities. Primarily, increased natural gas use would result from operation of HVAC equipment and hot water heaters in new buildings. The increase in natural gas use can be estimated on the bases of new building areas. Using the building area values and assumptions employed for estimating increased electrical use, the Proposed Action would increase natural gas use by an additional 4.7 $mmft^3$ per year, or an increase of approximately four percent. The increase in natural gas use from operation of completed buildings associated with the Proposed Action would be considered direct effects, and would not be considered significant.

4.2.5 Biological Resources

4.2.5.1 Plant Communities

Impacts to plant communities result primarily from the loss of individuals and habitat due to clearing the construction envelope, a land surface area typically equal to twice the square footage of the constructed facility. Land clearing activities conducted prior to

construction would create a direct effect on plant communities. Table 3.5 lists the estimated size of the construction envelope and the total acreage of each affected plant community that would be impacted or lost due to the Proposed Action construction projects. The Proposed Action would result in the disturbance of approximately 31 acres of land at Buckley AFB. A total of 13.56 acres of weedy, crested wheatgrass prairie, 13.85 acres of noxious weeds, 2.38 acres of weedy lawn, 0.06 acres of bluegrass lawn, 0.52 acres of weedy, short-grass prairie, and 0.59 acres of bare ground would be affected. In addition, construction of the new Athletic Fields may require removal of up to 1,000 ft of low quality shelter belt trees, and construction of the Munitions and Hazardous Materials Gate may require removal or and undetermined linear footage of high quality, five-row, 75-ft wide shelter belt trees. The net impact on plant communities is the facility footprint plus parking lots sidewalks, walkways, and landscaping. The residual disturbed acreage at each project site would be reseeded to restore the original shortgrass/mixed grass prairie, thus minimizing the loss of existing vegetation. Total disturbance from the Proposed Action is equal to one percent of the total installation surface, and is a small, negligible long-term impact on installation plant communities. In addition, four demolition projects in the Marine Compound area would result in a 0.31 acre increase in mixed grass prairie. This is the most desirable outcome because the mixed grass prairie is second only to riparian habitat in ecological importance at Buckley AFB. As a result of restoration to project sites and the addition of mixed prairie at the Marine Compound, the net loss of weedy, mixed grass prairie would be reduced.

4.2.5.2 Noxious Weeds

Stands of noxious weeds result from the invasion of disturbed ground by aggressive, non-native plants. The Proposed Action would result in approximately 31 acres of ground disturbance which could be invaded by noxious and other weed species if control techniques do not closely follow disturbance. Since noxious weeds are capable of establishing themselves in short time periods (a single growing season) their proliferation would be considered a direct effect. Primary controls to thwart establishment of noxious weeds at project construction sites includes the following BMPs:

- Application of a broad-leaf herbicide immediately following construction
- Timely reseeding of construction sites with sterile oats or winter wheat
- Follow herbicide treatments with timely planting of rapid growing, sterile, annual grass, such as sterile oats or winter wheat to establish root mass and compete with weeds
- Follow sterile oats or winter wheat planting with mixed grass prairie seeding
- Augment mixed grass in following growing season as needed.

The above BMP would result in a short-term, minor impact from noxious weeds. In addition, the four demolition projects located at the Marine Compound area would result in a net loss of 0.31 acres infested with noxious weeds. This constitutes a long-term direct and positive impact on plant communities.

4.2.5.3 Wildlife

Impacts to wildlife as a result of the Proposed Action include the loss of habitat and direct displacement of animals. Land clearing activities conducted prior to construction would create a direct effect on plant wildlife communities. Both common species and species that are rare and/or protected by state endangered species laws could be affected.

General Wildlife

The Proposed Action would result in the short-term displacement of animals from 31 acres of weedy, bluegrass, weedy lawn, and noxious weed habitat. A very small number of small mammal mortalities may occur due to excavation of burrowing species. An even smaller number of reptile deaths may also occur, again due to the excavation of subterranean animals. The black-tailed prairie dog and the burrowing owl are discussed in additional detail below.

A negligible long-term and cumulative impact due to net habitat loss would also result from the Proposed Action. The loss of small mammal habitat would create a negligible

impact on several small animal populations as well as on vertebrate predators (small/medium mammal predators, raptors and raptorial passerines [loggerhead shrike]).

Threatened/Endangered Species and Species of Special Concern

Three other species, the bald eagle, loggerhead shrike, and ferruginous hawk are known, to visit Buckley AFB, but are not known to roost or nest at any of the project sites. In addition there is potential habitat for the olive-backed pocket mouse and host plants for the Colorado blue butterfly. However, the olive-backed pocket mouse was not found during site visits.

Two species, the black-tailed prairie dog, a state Species of Special Concern and a Candidate for listing under the ESA, and the burrowing owl, a state Threatened species occur or, in the case of the burrowing owl, are likely to occur, at the following nine project sites:

- Athletic Fields
- Chapel
- Child Development Center
- Leadership Development Center
- Munitions and Hazardous Materials Gate
- Building 1620
- Building 1631
- Building 1632
- Marine Compound Concrete Foundations

It is estimated that a maximum of 27 acres, or five percent of the Buckley AFB black-tailed prairie dog colony would be relocated or removed as the result of the Proposed Action. This constitutes a small, direct, short-term impact to the black-tailed prairie dog/burrowing owl habitat resource at Buckley AFB. Where black-tailed prairie dogs occur they would be managed in accordance with the Supplemental EA of Proposed Prairie Dog Practices at Buckley AFB prior to the start of ground disturbance (USAF, 2001). Management Practices specified in the Supplemental EA of Proposed Prairie Dog

Practices include removed by trapping or poisoning if the animals could potentially harm the welfare of people or flight operations. Trapped animals would be relocated or donated to the Bureau of Land Management black-footed ferret recovery program in Colorado or other states.

A survey for burrowing owls would be performed prior to any black-tailed prairie dog control action or the start of ground disturbance at the nine sites listed above and if site clearing is to occur during the owls' summer residence at the installation (March – October) (Colorado Department of Wildlife [CDOW], 2002). Clearing activities from November through February can occur without burrowing owl surveys because the species is not resident during the winter months and would not stay at former nest sites that have been removed. If burrowing owls are located at construction sites at any time, the Buckley AFB Natural Resource Manager would be notified prior to any further disturbance. The owls can not be moved when nesting and until the young have fledged.

Construction impacts to black-tailed prairie dogs and other wildlife species would consist of excess noise from construction equipment, and movement and close proximity of humans and moving equipment. This activity would result in startle and alarm behaviors and other stressful behaviors such as escape movements, extra time spent in burrows and a loss of foraging time. In addition, the presence of humans and construction activities would reduce predator hunting on nearby black-tailed prairie dogs.

4.2.6 Traffic

Impacts on traffic at Buckley AFB resulting from the Proposed Action would be created from additional vehicles traveling to and within the base boundaries, and from construction and operation of the proposed new Munitions and Hazardous Materials Entrance Gate. The day-time base population would increase by a total maximum of 297 individuals (192 children and 20 instructors at the Child Development Center and 85 medical professional at the expanded Clinic) as a result of the Proposed Action. However, since it is assumed that the children that would attend the Child Development Center would be delivered to that facility by parents that currently work at Buckley AFB,

the impact of this project would affect only on-base traffic. On and off-base traffic increases created by construction activities and operation of completed buildings would be considered direct effects. Potential impacts of on and off-base traffic details for the North and Telluride Gates, the South Gate and the proposed new Munitions and Hazardous Materials Entrance Gate are discussed below.

4.2.6.1 North and Telluride Gates

Off-Base Traffic

The gate selected by individuals commuting to Buckley AFB would depend primarily on their residential location in respect to the base and preferred travel routes. For this EA it will be assumed that one-half of the additional traffic created by the Proposed Action would enter the base through the North and South Gates. This means approximately 53 new vehicles would enter through the North Gate per day. The North Gate currently sees approximately 655 peak morning hour inbound vehicles. Assuming that all 53 additional vehicles arrive during peak morning hours, this number would increase to 708 vehicles, an eight percent increase. The number of vehicles during the peak evening traffic hour west of the Main and Telluride Gates, on 6th Avenue, is currently approximately 1,300 vehicles per hour. Assuming that three-quarters of the total 53 additional vehicles exiting the base during the peak evening traffic hour travel west, this number would increase to approximately 1,340 vehicles per hour, a three percent increase. In the opposite direction, east of the gates on 6th Avenue, the number of vehicles traveling during the peak evening traffic hour is currently 400 vehicles per. Assuming that the remaining one-quarter of the 53 additional vehicles exiting the base during the peak evening traffic hour travel east, this number would increase to approximately 413 vehicles per hour, a three percent increase. Off-base traffic at the new Telluride Gate would not be expected to be impacted significantly by the Proposed Action, as this gate is primarily used to access the BX and commissary.

Traffic proceeding to the base from E-470 exit 19 would turn east or west off the exit ramp on 6th Avenue Parkway, and travel south on Gun Club Road or Picadilly Road. From Gun Club Road, traffic would travel east on Bayaud Avenue, turning left onto

Picadilly Road (south). Southbound traffic on Picadilly Road would turn right (northeast) on 6th Avenue and access the North Gate. Assuming that one-quarter of all traffic would exit and enter the base to and from the east, and all of this traffic would be assumed to travel on E-470, traffic flow at exit number 19 would increase to 314 vehicles per day (a five percent increase).

The proposed action would create an estimated three percent increase in off-base traffic on 6th Avenue in both the east and westbound directions, and a five percent increase in traffic at E-470 exit 19. From visual observations of these roadways, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided, or otherwise create a significant off-base traffic impact at the North Gate.

On-Base Traffic

Due to the proposed location of the Child Development Center and the expanded Clinic, it would be likely that the instructors, new medical professionals and patients visiting the Clinic entering Buckley AFB through the North Gate would proceed south on Aspen Avenue until reaching A-Basin Avenue. Clinic employees and patients would access the parking lot directly from Aspen Avenue or via a right turn onto A-Basin Avenue (west) and immediate left turn (south) into the parking lot. Child Development Center instructors would proceed south on Aspen Avenue, turning right onto A-Basin Avenue and proceed east until reaching the parking lot for the Center. Parents delivering children to this facility would take a similar route, but would then proceed to the area on the base at which they work.

Traffic volumes at the North Gate may have decreased in the recent past, due to the opening of the Telluride Gate. The increase in vehicles entering the North Gate is estimated to be 53 vehicles per day. Assuming an even distribution of these vehicles during the peak morning hour, the increase in traffic entering the North Gate would increase from 655 to 708 (an eight percent increase) and the existing capability to open and operate two inbound processing lanes would be adequate and would not overload

existing security processing lanes, or create safety issues, congestion, time-delays etc. On-base road traffic in the vicinity of the North Gate would increase by the 53 additional vehicles entering the facility (primarily traveling on Aspen and A-Basin Avenues). The existing on-base roadways have sufficient capacity to handle this additional traffic flow, and from visual observations, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided.

4.2.6.2 South Gate

Off-Base Traffic

Since all construction and demolition vehicles required to complete the Proposed Construction II projects would access Buckley AFB through the South Gate, off-base traffic on Mississippi Avenue will increase throughout the phases of construction and demolition activities of the Proposed Action. The impacts would vary depending on the starting and ending dates of each of the projects. Calculations of the number of construction and demolition vehicles, as well as contractor employee personnel vehicles were estimated to make air emission calculations related to the Proposed Action (Section 4.2.1). Using these assumptions and considering one-half of the projects to be occurring simultaneously (a reasonable worst-case condition) a total of 30 construction and demolition vehicles and 120 personnel contractor employee vehicles would be entering the South Gate off of Mississippi Avenue daily. Currently approximately 780 peak morning hour inbound vehicles pass through the South Gate. Assuming that half the additional construction-related vehicles arrive during peak morning hours (as construction equipment and materials deliveries are likely to take place throughout the day), this number would increase to 855 vehicles, a nine percent increase. West of the South Gate, Mississippi Avenue is a four-lane divided boulevard currently carrying 700 vehicles per hour on the road during peak traffic hours. Assuming that three-quarters of the total 75 additional construction-related vehicles exiting the base during the peak evening traffic hour travel west, this number would increase to approximately 775 vehicles per hour, an eight percent increase.

Following the assumptions made in Section 4.2.6.1, after the Proposed Construction II projects are complete 53 new commuter vehicles would enter the base through the South Gate daily. Assuming that all additional vehicles arrive during peak morning hours, the number of inbound vehicles passing through the South Gate would increase to 833 vehicles, a seven percent increase. Assuming that three-quarters of the total 53 additional vehicles exiting the base during the peak evening traffic hour travel west, the number of vehicles traveling west on Mississippi Avenue would increase to approximately 740 vehicles per hour, a six percent increase.

The athletic fields may be used for sports activities and other small events (i.e. concerts, tournaments, etc.), which would not be open to the public and would typically be scheduled after peak morning and evening traffic hours. Traffic increases due to personnel traveling to the installation after duty-hours would have a minimal impact on off-base traffic due to the following:

- The limited number of individuals traveling to and from the base (teams are typically comprised of less than 20 individuals).
- Some base personnel would be expected to remain on-base after duty-hours to participate in activities, subsequently returning to residences after the peak evening traffic hour.
- The time of the trips are outside the peak morning and evening traffic hours.
- The frequency of trips is seasonal (all fields are outdoors and winter traffic for athletic field purposes would be negligible).

Forecasted future projects for Buckley AFB would result in construction of additional on-base housing. The overall impacts of off-base personnel traveling to the installation after duty-hours to participate in activities on the athletic fields would be further reduced following completion of the on-base housing construction. This is because individuals currently living off-base would be provided with on-base living opportunities, and as a result, would not travel off-base for these purposes.

Traffic proceeding to the South Gate from E-470 exit 16 would turn west on Jewell Avenue, then turn right (north) on Dunkirk Street or Tower Road. Dunkirk Street veers from north to east and becomes Mississippi Avenue, providing access to the South Gate. Traffic traveling north on Tower Road would turn right (east) onto Mississippi Avenue and access the South Gate. Assuming that one-quarter of all construction traffic would exit and enter the base to and from the east, and all of this traffic would travel on E-470, traffic at exit number 16 would increase to 2,938 vehicles per day (a one percent increase).

Assuming that one-quarter of all commuter traffic would exit and enter the base to and from the east, and all of this traffic would travel on E-470, traffic flow at exit number 16 would increase to 2,914 vehicles per day (less than a one percent increase).

The Proposed Action would cause an estimated short-term construction/demolition increase of eight percent and a long-term six percent operational increase in off-base traffic on Mississippi Avenue in the westbound direction, and a one percent short-term construction/demolition increase and a less than one percent long-term operational increase in off-base traffic at E470 exit 16. From visual observations of these roadways, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided, or otherwise create a significant off-base traffic impact at the South Gate.

On-Base Traffic

Since all construction and demolition, and contractor employee vehicles required to complete the Proposed Construction II projects will access Buckley AFB through the South Gate, on-base traffic traveling north on Aspen Avenue would increase. From Aspen Avenue, the majority of the construction and demolition traffic would travel west to project sites, turning left and using A-Basin Avenue (for the Clinic, Chapel and Child Development Center) or turning left on Winter Park Avenue (for the Athletic Fields and Building 19). The Leadership Development Center, new Visitors Center, and Buildings 40 and 41 are located directly west of Aspen Avenue and would be accessed directly

from that artery. Construction traffic for the Munitions and Hazardous Materials Entrance Gate and Buildings 1620, 1631, 1632 and the Marine Compound Foundations would be accessed by traveling east (turning right) on Steamboat Avenue. Building 902 would be accessed by turning right off of Aspen Avenue, and traveling east on Breckenridge Avenue.

The increase in construction and demolition, and contractor employee vehicles entering the South Gate is estimated to be 150 vehicles per day. Assuming an even distribution of half of these vehicles arriving during the peak morning hour, the existing capability to open and operate two inbound processing lanes would be adequate. On-base road traffic in the vicinity of the South Gate would be increased by the 150 additional vehicles entering the facility. The existing on-base roadways have sufficient capacity to handle this additional traffic flow.

Due to the proposed location of the Child Development Center and the expanded Clinic, after the Proposed Construction II projects are complete, it would be likely that the instructors, new medical professionals and patients visiting the Clinic entering Buckley AFB through the South Gate would proceed north on Aspen Avenue until reaching A-Basin Avenue. Clinic employees and patients would access the parking lot directly from Aspen Avenue or via a left turn onto A-Basin Avenue (west) and immediate left turn (south) into the parking lot. Child Development Center instructors would proceed north on Aspen Avenue, turning left onto A-Basin Avenue and proceed east until reaching the parking lot for the Center. Parents delivering children to this facility would take a similar route, but would then proceed to the area on the base at which they work.

The short-term increase in construction/demolition vehicles entering the South Gate is estimated to be 150 vehicles per day, while the long-term vehicle increase would be 53. Assuming an even distribution of half of the construction and all of the commuter vehicles during the peak morning hour the existing capability to open and operate two inbound processing lanes would be adequate and would not overload existing security processing lanes, or create safety issues, congestion, time-delays etc. On-base traffic

during construction and demolition projects in the vicinity of the South Gate would increased by 150 additional vehicles entering the facility and accessing project sites directly off of Aspen Avenue, traveling west on A-Basin or Winter Park Avenues, or traveling east on Steamboat or Breckenridge Avenues. On-base road traffic in the vicinity of the South Gate would be increased by the 53 additional vehicles entering the facility (primarily traveling on Aspen and A-Basin Avenues) to access the Child Development Center and the expanded Clinic once they are operational. The existing on-base roadways have sufficient capacity to handle this additional traffic flow, and from visual observations, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided.

4.2.6.3 Munitions and Hazardous Materials Entrance Gate

Off-Base Traffic

A new Munitions and Hazardous Materials Entrance Gate is proposed as part of this EA. The new Munitions and Hazardous Materials Entrance Gate would be located to the southwest of 6th Avenue, east and south of the old Navy Gate (an inactive/closed gate), and would provide access to Steamboat Avenue. The Proposed Action for the new Munitions and Hazardous Materials Entrance Gate includes installation of vehicle inspection area that would be used to inspect in- and outbound hazardous cargo vehicles. The gate would be constructed with deceleration and turning lanes parallel to 6th Avenue, allowing large vehicles entering the base to safely merge out of the general traffic flow prior to turning. The new gate would be primarily used to permit delivery of munitions and other hazardous cargo delivery vehicles onto the base, and as such, would receive infrequent and intermittent traffic. Buckley AFB has a Draft Integrated Environmental Response Plan (IERP), which includes a Spill Prevention Control and Countermeasure SPCC Plan, and a Hazardous Waste Management Plan (HWMP) that are in the final stages of review and publication. The procedures set forth in these plans would be implemented if an accidental spill from vehicles delivering or exporting materials through this gate were to occur. Estimated delivery frequencies are less than ten

deliveries per month, with an average of four to five deliveries per month. The gate will not be continually manned, and entities delivering cargo through the new gate would be required to provide advance notice to the installation to prepare for acceptance. Munitions are currently transported onto the base using a gate located on the east side of the Base. Hazardous materials are currently transported on to the base using the Mississippi Gate, which is near a residential area. The proposed Munitions and Hazardous Materials Gate would be located along State Highway 30, which is a designated hazardous cargo route. Therefore, it was considered the best overall route even though the on-base transportation routes have increased. Therefore, the new gate would provide safer access for hazardous materials.

Since entrance through the proposed Munitions and Hazardous Materials Entrance Gate would be restricted to infrequent and intermittent delivery vehicles, the potential off-site traffic impacts would not be significant.

On-Base Traffic

Due to the proposed location of the new Munitions and Hazardous Materials Entrance Gate, most delivery vehicles entering at this location would travel northwest on Steamboat Avenue to access drop-off destinations located throughout the base. The point at which the new gate would tie into Steamboat Avenue is relatively remote and would not create significant impacts on traffic. Since the delivery vehicles are currently entering the base through the North and South Gates, on-base traffic would not change from existing conditions. Therefore, delivery vehicle traffic on on-base roadways would not change and no resulting significant on-base traffic impacts would occur.

4.2.7 Water Resources

Impacts on water resources at Buckley AFB could potentially result from construction, demolition and operation of the structures and facilities included in the Proposed Action. The ground disturbance phase of construction and demolition activities would require ground disturbance which can create erosion and cause runoff to become contaminated with particulate matter (silt, soils, sand, etc.). The storage of fuels, oils and other

hazardous fluid materials can result in releases of these materials. In addition, fueling and operation of construction vehicles and equipment using these materials can create spill and leaks. The construction of buildings and installation of parking lots associated with the Proposed Action would result in an increase in impervious surfaces at the base. Increased impervious surfaces would cause additional volumes of runoff when precipitation event occur, increasing the volume of stormwater discharge. The potential water resource impacts on watershed and aquifers are further discussed below.

4.2.7.1 Surface Water

Buckley AFB is located within the South Platte River drainage basin. Buckley AFB generally is divided into two watershed regions. Individual Proposed Construction II project sites are located throughout the base and within Watersheds 1 and 2. The ground disturbance phase of construction and demolition activities would require land disturbance that can result in surface water contamination due to erosion and transport of particulate matter via stormwater runoff. These effects would be considered to be direct and indirect, as erosion and transport of particulates could have both immediate local impacts, within Buckley AFB boundaries, and downstream impacts on receiving streams off-base. Common BMPs for construction demolition activities should be followed to minimize erosion. Preventive BMPs may include the following:

- Limit stockpiling of materials onsite
- Manage stockpiled materials to minimize the time between delivery and use
- Cover stockpiled materials with tarps
- Install snow or silt fences around material stockpiles, stormwater drainage routes, culverts, and drains.
- Install hay or fabric filters, netting, and mulching around material stockpiles, stormwater drainage routes, culverts, and drains.

BMPs for storage, transfer and use of fuels, oils and other hazardous liquid materials should be practiced. The measures can include the use of double-walled tanks or secondary containment for liquid storage areas and tanks; using care when transferring liquid materials to vehicles equipment and other containers; having spill cleanup materials available on hand at storage and transfer locations; expeditiously cleaning up spills and leaks; and inspecting and maintaining construction vehicles and equipment to detect and correct leaks. Contracts for construction and demolition projects should require contractors to implement erosion and spill control BMPs.

Operation of the completed structures and facilities would increase the impervious surfaces at the base. Roofs, parking lots, sidewalks and walking paths would all reduce the areas in which precipitation can infiltrate the earth surface. Table 4.7 shows estimated increases in impervious areas anticipated from implementing the Proposed Action.

Table 4.7 Increased Impervious Surface Calculations

Project	Building Area Impervious Surfaces (ft^2)	Parking Lot Impervious Surfaces (ft^2) (1)	Walkway Impervious Surfaces (ft^2) (2)	Sidewalk Impervious Surfaces (ft^2)	Total Impervious Surfaces (ft^2)
Chapel	26,500	90,000	8,300	4,150	128,900
Child Development Center(3)	26,000	81,000	8,300	4,150	119,450
Clinic	5,000	53,333	4,000	2,000	64,333
Leadership Development Center	18,000	182,000	7,200	3,600	210,800
Munitions and Hazardous Materials Gate(4)	0	10,000	1,500	750	12,250
New Visitors Center	1,000	9,600	1,800	900	13,300
Totals	76,500	425,933	31,100	15,550	549,083

(1) Parking Lot area is estimated on 300 ft^2 per parking space, including turning areas.

(2) Sidewalks length is assumed to be the full perimeter length of the building (with building lengths assumed to be two-times the width). Walkway length is assumed to be two-times the full perimeter length of the building. Total area for Walkways and Sidewalks is calculated assuming 6-foot wide walkways and sidewalks.

(3) Impervious surfaces includes playground areas.

(4) Impervious Parking Lot area for the Munitions and Hazardous Materials Entrance Gate is based on two vehicle parking spaces and a delivery vehicle pull-off and inspection area totaling 10,000 ft^2.

As shown on Table 4.7, the Proposed Action would increase the impervious surfaces at Buckley AFB by approximately 549,083 ft^2, or approximately 13 acres. This would increase the total impervious surface at the base to a total of 538 acres, an increase of 2.5 percent. The Proposed Action would result in 16.8 percent of the total 3,200 acre drainage area at Buckley AFB being impervious surface. The base has extensive natural and man-made surface drainage as well as underground storm drainage lines that would convey increased stormwater volumes created from increased impervious surfaces.

4.2.7.2 Stormwater

The Proposed Construction II project sites are relatively flat with little noticeable slopes. However, several proposed sites are bounded by existing roadways. The roadways provide stormwater drainage through natural overland surface runoff, and man-made engineered drains, culverts and above and underground piping systems. Stormwater runoff from Buckley AFB drains into one of three streams adjacent to the base, with East Toll Gate Creek receiving flow from the western side of the base, and Sand Creek and Murphy Creek receiving flows from the eastern side of the base. Proposed Actions construction and demolition sites are distributed throughout the facility (on the east and west sides of the base) and are likely to increase the volume of stormwater runoff received by all three of the streams that drain Buckley AFB.

The ground disturbance phase of construction and demolition activities can impact stormwater discharges due to erosion and spills of hazardous materials that can be transported via stormwater runoff and discharge to receiving streams. No increases in stormwater discharge volume would be expected during construction and demolition activities. However, construction sites of greater than or equal to one acre require a NPDES General Permit for Stormwater Discharges from Construction Activities. The USEPA regulates construction sites creating ground disturbance of greater than one acre at Federal facilities. The City of Aurora does not have a USEPA or CDPHE approved

stormwater permitting process for construction sites. The estimated areas of disturbance for most of the individual Proposed Construction II construction projects exceed the one acre threshold (ranging from 0.5 to 9.2 acres) and would require NPDES General Permit for Stormwater Discharges from Construction Activities. The permits require submission of a Notice of Intent (NOI) to the USEPA to be covered by the General Permit for Stormwater Discharges from Construction Activities. The NOI must be completed and submitted to the USEPA. The NOI must then be posted on the USEPA website for 7-days in order for coverage under this permit to become effective. Development and implementation of a stormwater pollution prevention plan (SWPPP) that identifies possible pollutant sources to stormwater (e.g., sediment) and outlines BMPs to minimize adverse water quality impacts is also required. The SWPPP must be completed before the NOI is submitted. Contracts for construction projects should be written to include the requirement and responsibility of the contractor to submit the NOI and obtain the required permit, and prepare and follow an appropriate SWPPP.

Operation of the completed buildings, parking lots, sidewalks and walking paths would create the additional runoff volume. Once construction projects are completed an increase of approximately 549,083 ft^2 of impervious surfaces is expected. Assuming an annual precipitation rate of 16.3 inches per year and no losses due to evaporation, the anticipated increase in stormwater due to the Proposed Action would be approximately 5.6 mgy. The exact direction of increased runoff would need to be assessed in further detail. Comprehensive topographic map and contour reviews may be required to determine directions of flow and which streams would receive discharges from individual proposed construction sites. The results of these reviews may determine that new or expanded existing engineered stormwater components (drains, culverts and above and underground piping systems) are required to allow proper drainage during and after precipitation events, and prevent erosion and localized flooding. Potential contamination from parking lots can also result if spills or leaks from vehicles occur and are permitted to enter the stormwater system. These materials can also be transported via stormwater runoff. Potential effects on stormwater would be considered both direct and indirect, as the capacity of stormwater system components on and off-base could be exceeded by

increased stormwater runoff. In addition, particulates and/or other contaminants (leaked or spilled hazardous materials) that enter the stormwater system on-base can be transported and impact stormwater quality within Buckley AFB boundaries, as well as off-base in downstream receiving streams.

Stormwater throughout Buckley AFB is regulated under the USEPA NPDES Storm Water Multi-Sector General Permit for Industrial Activities (COR05A13F, 12/1/2003). The NPDES permit considers all of Buckley AFB an industrial site, with the storage of hazardous materials occurring in all four drainage areas. The permit recognizes the potential for runoff contamination, authorizes the discharge of storm water associated with industrial activity, and requires annual monitoring activities. The permit should be reviewed and amended appropriately if Proposed Construction II projects would affect the contents and/or create new or additional system or discharge inspection, sampling or monitoring requirements. Buckley will obtain coverage under the NPDES General Permit for Storm Water Discharges from Federal Facility Small Municipal Separate Storm Sewer Systems in Colorado by February 2004. In addition to permitting construction activities, under this permit, Buckley must ensure that controls are in place to prevent or minimize water quality impacts after construction is complete. These controls should be included in the design of the facility.

4.2.7.3 Groundwater

The Proposed Action would have a limited and negligible affect on groundwater. As discussed in Sections 4.2.7.1 and 4.2.7.2, the increase in impervious surfaces that would result from the Proposed Action would increase stormwater runoff and discharges. Assuming that 100 percent of the increased runoff caused by the loss of pervious surfaces is discharged as stormwater, there would be a loss of 5.6 mgy that had previously been infiltrating and recharging the aquifers underlying Buckley AFB. However, depending on hydrogeologic conditions, stormwater runoff that reaches the three receiving streams can recharge groundwater directly from the stream channel. Potential effects on groundwater would be considered indirect, as the loss of water infiltrating and recharging aquifers underlying Buckley AFB would potentially have impacts reaching beyond

Buckley AFB boundaries. Ultimately, the Proposed Action would not be expected to significantly impact groundwater resources.

4.2.8 Radon

Depending on the location and type of construction of the Proposed Construction II buildings radon issues could result. Completed structures should be monitored for radon levels. If structures show radon levels over 4.0 pCi/l appropriate radon reduction actions should be implemented. An elevated concentration is defined as being at or above the USEPA suggested guidelines of 4.0 pCi/l. Soil gas entering structures through basements, crawl spaces, cracks and openings in slab-on-grade floors, and below-grade walls and floors is the primary source of elevated radon levels. Radon moves into a building due to lower indoor air pressure resulting from heated air rising, wind, air used by fireplaces and wood stoves, or air vented to the outside by clothes dryers and exhaust fans in bathrooms, kitchens, or attics. TSCA Title III, "Indoor Radon Abatement," states indoor air in buildings of the United States should be as free of radon as the outside ambient air. Federal agencies are required to conduct studies on the extent of radon contamination in buildings they own. Potential radon effects would be considered direct.

4.2.9 Lead Based Paint

No LBP would be used in construction of Proposed Construction II buildings.

Air Force Policy (1993) ensures that LBP hazards are abated during building renovations or demolitions. The Proposed Action involves demolition of buildings that could contain LBP, as some of the facilities may have been constructed and painted prior to or during 1978. In addition, the base engineer is required to assume that all structures constructed during or prior to 1985 potentially contain LBP. A LBP survey may need to be conducted in buildings scheduled for demolition. The survey would involve sampling of painted surfaces and sample analysis to determine if LBP are present. If the presence of LBP is confirmed the associated hazards would be abated in accordance with applicable federal, state, and local regulations prior to the demolition of the buildings. Contracts written for demolition projects would need to contain details of LBP abatement

if it is present in buildings scheduled for demolition. Potential LBP effects associated with the Proposed Action would be considered direct. If proper abatement procedures are followed, there would be no impacts from LBP with respect to the Proposed Action.

4.2.10 Asbestos

Infrastructure, including asbestos lined pipes, was left in place during past demolition projects of World War II era structures (occurring in the 1950's-1960's). Therefore, the potential exists for either finding asbestos lined pipes or asbestos contaminated soil during construction. In particular, this may be the case for the sites scheduled for the Child Development Center and the Athletic Fields, but may also apply at other construction and demolition sites. The Chapel, expanded Clinic, Leadership Development Center, Munitions and Hazardous Materials Entrance Gate construction and Buildings 1620, 1631, 1632 and Marine Compound Concrete Foundation demolition projects are located outside the areas where the World War II era structure demolition projects took place. Therefore, it is unlikely that historic asbestos contaminated soils or other components would be encountered while conducting construction/demolition activities in the vicinity of these projects. In addition to buried historical ACM that may be encountered during excavation activities, some of the structures scheduled for demolition may contain asbestos insulation and/or floor/ceiling tiles. In particular, Building 19 is believed to contain asbestos insulation. If asbestos is encountered demolition activities would proceed under CDPHE Air Pollution Control Division regulations for asbestos abatement, renovation and demolition projects found at Title 5 CCR 1001-10 Regulation No. 8, Part B, Section III.

If unexpected ACM is encountered during any construction or demolition activity, the activities would be terminated immediately and measures would be taken to secure the area and prevent the release of ACM. The Base would consult and coordinate activities with the CDPHE to determine the appropriate measures and all local, state, and federal regulations would be followed for proper remediation and disposal.

Potential effects of ACM encountered during Proposed Action activities would be considered direct. Impacts from asbestos-containing material would be considered significant if the Colorado Department of Public Health and the Environmental and/or Occupational Safety and Health Act standards were exceeded by material present during the construction or if the asbestos-containing material were left in place where later detrimental exposure of workers or the public could occur. The ROI for ACM is considered to be the construction and demolition sites or its immediate surroundings where airborne asbestos fibers might be sufficiently concentrated to be inhaled in harmful quantities.

4.2.11 Noise

The federal noise measure used for assessing total daily noise exposures in communities is the DNL. Most people are exposed to sound levels of 50 to 55 DNL or higher on a daily basis. The primary human response to environmental noise is annoyance. The degree of annoyance has been found to correlate well with the DNL. Several social surveys have been conducted in which people's reaction to their noise environment has been determined as a function of DNL occurring outside their homes. Guidelines have been developed for individual land uses based upon the information collected in these surveys and upon information concerning activity interference.

Noise impacts from the Proposed Action are a function of construction and demolition activities. Noise created from construction and demolition activities could have short-term on and off-site direct effects. The highest calculated cumulative energy equivalent sound levels from construction activities are estimated to be 85 dB at 50 ft from the center of the project site. Noise levels at 50 ft for some equipment used during construction and demolition activities are: 80 dB for bulldozers, 83 dB for cranes, 85 dB for backhoes, and 91dB for trucks. The impacts from noise would vary according to the activity occurring on any given day and impacts would cease when construction and demolition is completed. There may be nearby adjacent receptors to experience noise impacts from certain demolition and construction sites. However, noise impacts from the Proposed Action would not greatly increase ambient levels, be short-term, and would

discontinue after demolition, site grading and construction are complete. Construction and demolition activities may need to be restricted to day-time hours only. However, the effects of noise during the construction and operation of the Proposed Action would be expected to be moderate and would be consistent with acceptable noise levels on an active Air Force base.

The location of the completed buildings and structures are within the 65 dB contour, therefore the individuals working or frequenting these facilities would not be ill affected by noise associated with aircraft/airspace operations. The effects of noise resulting from the Proposed Action would not be significant.

4.2.12 Socioeconomics and Environmental Justice

The Child Development Center would be capable of accommodating 192 children. It is assumed that 20 staff personnel would be required to operate the Child Development Center (based on approximately one individual staff member for every ten children). The expanded Clinic would allow an increase of approximately 85 medical personnel (from 35 individuals in 2000 to 120 individuals in FY04). Under these assumptions, employment at the base would increase by 105 individuals, an increase of one percent over the current employment status. This represents a positive direct socioeconomic effect.

Although several minority/low income areas exist adjacent to Buckley AFB, the Proposed Action construction and demolition projects would be occurring in an industrially zoned area. As concluded in this EA, the Proposed Action would have minor direct short-term effects on air quality, hazardous materials, hazardous wastes, utilities, biological resources, traffic, water resources, lead-based paint, and noise. Short-term direct moderate impacts may result related to asbestos, while minor long-term impacts could result for radon and hazardous wastes; and moderate long-term impacts could result for utilities, biological resources, traffic, and water resources. Of these, biological resource impacts would not affect minority/low-income areas because subsistence foraging does not occur on the installation. Water resource impacts would be negligible

on minority/low-income areas if BMPs and discharge permits are followed. Asbestos, hazardous waste, hazardous materials, noise, lead-based paint, radon impacts are negligible for surrounding minority/low-income areas if BMPs are employed. Air quality impacts would be minor and dispersed throughout the western Arapahoe County airshed. Increases in utility services including gas, water, and electricity may result in a negligible long-term increase in utility usage for the surrounding community. Traffic increases as a result of the Proposed Action would cause slight increases in peak-hour arterial traffic volumes, but would not cause systemic traffic flow changes within adjacent minority/low-income areas. Operation of the Munitions and Hazardous Materials Gate would eliminate the current circumstance where hazardous materials deliveries are entering the facility adjacent to a residential area. Implementation of the Proposed Action would reduce the potential for spills or other incidents related to delivery of hazardous materials in or around residential areas, presenting potential direct and indirect positive effects.

4.3 ALTERNATIVE ACTION 1: TIME DELAY, DOWNSIZE OR EXCLUDE "OPTIONAL" COMPONENTS OF PROPOSED ACTION

4.3.1 Air Quality

Table 4.6 lists the cumulative annual emissions that would be increased as a result of the Proposed Action. If Alternative 1 were followed it is likely that the cumulative environmental impacts on air quality would be diminished by some degree. The actual reduction in air quality impacts would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced impacts to air quality would be calculated on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified. The amount ODS that would be employed through Alternative 1 would also be decreased. The extent of the decrease would again depend on to the number and extent of projects that would be time-delayed, downsized or not constructed.

4.3.2 Hazardous Materials

If Alternative 1 were followed the quantity of hazardous materials stored and used onsite would be decreased by some degree. The actual reduction in storage and use of hazardous materials would be related to the number and extent of projects that would be time-delayed, downsized or not constructed at all. The reduced impacts of hazardous material use would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.3 Hazardous Wastes

The quantity of hazardous wastes generated onsite would be decreased by some degree if Alternative 1 were followed. The actual reduction in hazardous waste generation would be related to the number and extent of projects that would be time-delayed, downsized or not constructed at all. The reduced impacts of hazardous waste generation material use would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.4 Utilities

If Alternative 1 were followed the quantity of water, electricity and natural gas used would be decreased to some degree. In addition, the volume of wastewater generated would also be decreased by some degree. The actual reduction in use and generation would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced impacts on utilities would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.5 Biological Resources

If Alternative 1 were followed the impacts on biological resources would be decreased to some degree. The actual reduction in biological resources impacts would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced impacts on biological resources would be determined on a

project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.6 Traffic

If Alternative 1 were followed the impacts on traffic would be decreased to some degree. The actual reduction in traffic impacts on and off-site would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced impacts on traffic would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.7 Water Resources

If Alternative 1 were followed the impacts on water resources would be decreased to some degree. The actual reduction in impacts to water resources, including surface water, stormwater and groundwater would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced impacts on water resources would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.8 Radon

If Alternative 1 were followed the potential to encounter radon would be decreased to some degree. The actual reduction in potential radon exposure would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced potential affects of radon would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.9 Lead Based Paint

If Alternative 1 were followed the generation of LBP wastes could be decreased to some degree. The actual reduction in LBP waste generation would be related to the number and extent of projects that would be time-delayed, downsized or not constructed.

The reduced generation of LBP waste would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.10 Asbestos

If Alternative 1 were followed the generation of asbestos wastes could be decreased to some degree. The actual reduction in asbestos waste generation would be related to the number and extent of projects that would be time-delayed, downsized or not constructed. The reduced generation of asbestos waste would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.11 Noise

If Alternative 1 were followed noise impacts would be decreased to some degree. The actual reduction in noise generation would be related to the locations, number and extent of projects that would be time-delayed, downsized or not constructed. Noise generation reductions would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.3.12 Socioeconomics and Environmental Justice

If Alternative 1 were followed socioeconomics effects would be decreased to some degree. The actual increase in employment would be related to the extent that construction of the Child Development Center and Clinic expansion would be time-delayed, downsized or not constructed. The actual increase in employment would be determined as details related to time-delays, downsizing or elimination are known and can be quantified, and would generally be based on the actual size and related employment increases required to operate the Child Development Center and expanded Clinic.

The environmental justice effects on minority/low income areas existing adjacent to Buckley AFB would also be decreased to some extent if Alternative 1 were followed.

The actual increase in environmental justice effects would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified. If the Munitions and Hazardous Materials Gate is not constructed a negative effect will result, as hazardous materials would continue to enter Buckley AFB through the Mississippi Gate, as per current circumstances. This would result in the continuation of the potential for spills or other incidents related to delivery of hazardous materials to occur in or around the residential areas.

4.4 NO ACTION ALTERNATIVE

4.4.1 Air Quality

The No Action Alternative would have no impacts on air quality.

4.4.2 Hazardous Materials

The No Action Alternative would have no impacts on hazardous materials.

4.4.3 Hazardous Wastes

The No Action Alternative would have no impacts on hazardous wastes.

4.4.4 Utilities

The No Action Alternative would have no impacts on utilities.

4.4.5 Biological Resources

The No Action Alternative would have no impacts on biological resources.

4.4.6 Traffic

The No Action Alternative would have no impacts on traffic.

4.4.7 Water Resources

The No Action Alternative would have no impacts on water resources.

4.4.8 Radon

The No Action Alternative would have no impacts on radon.

4.4.9 Lead Based Paint

The No Action Alternative would have no impacts on LBP.

4.4.10 Asbestos

The No Action Alternative would have no impacts on asbestos.

4.4.11 Noise

The No Action Alternative would have no impacts on noise.

4.4.12 Socioeconomics and Environmental Justice

If No Action Alternative were followed socioeconomics effects would be decreased to some degree. The anticipated increase in employment required to operate the Child Development Center and expanded Clinic would not occur under the No Action Alternative.

The environmental justice effects on minority/low income areas existing adjacent to Buckley AFB would also be decreased if the No Action Alternative were followed. Since the Munitions and Hazardous Materials Gate would not be construction under this option, hazardous materials would continue to enter Buckley AFB through the Mississippi Gate, as per current circumstances. This would result in the continuation of the potential for spills or other incidents related to delivery of hazardous materials to occur in or around the residential areas

4.5 CUMULATIVE IMPACTS OF THE PROPOSED ACTION AND ALTERNATIVES

4.5.1 Proposed Action

The impacts of other pending construction projects at Buckley AFB must be considered when assessing cumulative impacts related to the proposed action. For this purpose, EAs for other projects scheduled for completion at Buckley AFB were consulted. These EAs include the following:

- The Antenna Construction EA (Buckley AFB, 2004b)

- Fire Training Area Construction EA (Buckley AFB, 2004c)
- Recreational Equipment Facility Construction EA (Buckley AFB, 2004d)
- Base Housing Construction EA (Buckley AFB, 2002d)

Emissions anticipated from the Proposed Action of this EA and the EAs listed above are presented in Table 4.8.

Table 4.8 Cumulative Impact Air Emissions

Pollutant	Emissions from Antenna Construction EA (Tons/Year)[1]	Emissions from Fire Training Area Construction (Tons/Year)[2]	Emissions from Recreational Equipment Facility Construction EA (Tons/Year)[3]	Emissions from Housing Privatization Construction EA (Tons/Year)[4]	Emissions from Proposed Construction II EA (Tons/Year)	Total Proposed Cumulative Emissions (Tons/Year)	De minimus Values (Tons/Year)	AQCR 36 Emission Inventory (Tons/Year)[5]	Above/ Below De minimus
CO	2.0	0.0	0.0	21.59	12.4	36.0	100	439,095	Below
VOC	0.3	0.0	0.0	3.4	2.7	6.4	100	185,055	Below
NOX	1.30	0.0	0.1	47.58	2.9	51.9	100	114,245	Below
SOX	0.5	0.0	0.0	5.1	0.3	5.9	100	65,700	Below
PM_{10}	0.54	0.0	0.0	47.9	27.0	75.4	100	25,550	Below

(1) Buckley AFB, 2004b

(2) Buckley AFB, 2004c

(3) Buckley AFB, 2004d

(4) Buckley AFB, 2002d

(5) CAQCC, 2000, 2001a, 2001b

When considering emissions created by the Proposed Action and emissions estimated for projects associated with EAs (see Table 4.8), and expected to be constructed during or around the time of the Proposed Action, there would be negligible adverse cumulative air impacts. The total cumulative estimated values for CO, VOC, NO_x, SO_x, and PM_{10} would be below the USEPA *de minimus* threshold levels and below the AQCR 36 ten percent criteria Emission inventory, (see Section 4.2.1 for emission calculations and comparison to *de minimus* threshold levels and AQCR 36 Emission inventory). Although there are other projects ongoing/planned throughout Buckley AFB, the *de minimus* environmental effects from this project, coupled with other ongoing/planned projects, would not create any cumulatively substantial adverse impacts on the environment.

Biological resources, specifically black-tailed prairie dogs and burrowing owls, would be adversely affected by the Proposed Action. Effects to the prairie dogs and, potentially, burrowing owls, would be moderate, local, and adverse.

Cumulative impacts on prairie dogs associated with construction occurring at Buckley AFB are addressed in Section 5 of the Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices at Buckley AFB (USAF, 2001). This EA states that the possibility exists of a potential adverse, cumulative impact on the area available to support a viable, self-sustaining prairie dog population that can support dependent species such as the burrowing owl. However, the USFWS reported that it does not consider Buckley AFB to be an area essential to maintaining a healthy population of prairie dogs in the United States. Therefore, the impact of the construction and demolition projects and a reduction in the black-tailed prairie dog population on a local scale, such as those created by the Proposed Construction II Proposed Action, would not represent a major adverse impact. The cumulative impact of the Proposed Action is negligible due to: (1) the large black-tailed prairie dog population in eastern Colorado; (2) state-wide, multi-agency efforts to conserve this species, and; (3) other black-tailed prairie dog conservation efforts at Buckley AFB.

The effect on the burrowing owls within the proposed construction areas would be adverse, as potential owl habitat would be destroyed. However, the impacts would be considered negligible under that same reasoning described above for black-tailed prairie dogs.

Water resources, specifically stormwater, would be adversely affected by the Proposed Action. Effects to stormwater would be moderate, local, and adverse. The Proposed Construction II projects would change the stormwater flow quantity and quality at the site. Stormwater flow across impermeable surfaces such as parking lots, streets, and roofs would increase the quantity of stormwater runoff entering the stormwater systems at Buckley AFB. The potential for surface water contamination (likely from automotive fluids) would increase with the construction and operation of the Proposed Construction II buildings and facilities and associated impermeable surfaces. However, stormwater flow can be controlled with design and best management practices in order to minimize any potential adverse impacts on surrounding surface water and soils, therefore adverse effects would be negligible.

4.5.2 Alternative Action 1: Time Delay, Downsize or Exclude "Optional" Components of Proposed Action

If Alternative 1 were followed indirect and cumulative impacts would be decreased to some degree. The actual reduction in resulting indirect and cumulative impacts would be related to the locations, number and extent of projects that would be time-delayed, downsized or not constructed. Indirect and cumulative impact reductions would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

4.5.3 No Action Alternative

The No Action Alternative would have no indirect or cumulative impacts.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES RELATED TO THE PROPOSED ACTION AND ALTERNATIVES

4.6.1 Proposed Action

NEPA requires that environmental analyses include identification of "…any irreversible and irretrievable commitments of resources that would be involved in the Proposed Action should it be implemented." The Proposed Construction II construction projects would require the consumption of moderate amounts of materials typically associated with construction activities (e.g., concrete, wood, and sand), while demolition projects would generate moderate quantities of waste debris. Fuels, electric and water would be required to complete individual construction and demolition projects. Operation of completed buildings and facilities would also create an estimated four percent increase in electricity consumption, a four percent increase in natural gas use, and a 15 percent increase in water use. These resources would be expended and irreversibly lost.

Implementation of the Proposed Action would result in moderate impacts to environmental resources including some prairie grass habitat being converted to concrete and asphalt foundations and parking lots. The relocation or removal of black-tailed prairie dogs would result in an irretrievable and/or irreversible impact by relocating or removing prairie dog colonies and potential habitat for burrowing owls and other wildlife (e.g., snakes, rabbits, badgers) that may use abandoned prairie dog borrows at Buckley AFB. All black-tailed prairie dog issues are addressed in the Supplement to Environmental Assessment of Proposed Prairie Dog Management Practices (USAF, 2001).

No additional wildlife habitat at Buckley AFB would be lost or adversely affected as a result of implementation of the Proposed Action.

4.6.2 Alternative Action 1: Time Delay, Downsize or Exclude "Optional" Components of Proposed Action

If Alternative 1 were followed the consumption of building construction materials would be decreased to some degree. In addition, the irreversible operational increases in electricity, natural gas and water use would likely be less than the Proposed Action, and would be proportional to the number and extent of projects that would be time-delayed, downsized or not constructed. Reductions in irreversible operational resource consumption under Alternative 1 would be determined on a project by project basis, as details related to time-delays, downsizing or elimination are known and can be quantified.

The reduction in loss of prairie grass habitat available for black-tailed prairie dog, burrowing owls and other wildlife population would also be directly related to the number and degree that projects would be time-delayed, downsized or not constructed under Alternative 1. Irreversible impacts on these resources under Alternative 1 would be determined on a project by project basis.

4.6.3 No Action Alternative

The No Action Alternative would create no irreversible or irretrievable resource consumption.

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SECTION 5

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SECTION 6

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SECTION 7

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APPENDIX A

CONSTRUCTION GROUND DISTURBANCE DETAIL TABLE

Construction Project Ground Disturbance Detail Table

Project	Project Ground Disturbance Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[(1)] (ft^2)	Parking Lot Land Disturbance[(2)] (ft^2)	Landscaping Land Disturbance[(3)] (ft^2)	Walkway Land Disturbance[(4)] (ft^2)	Sidewalk Land Disturbance[(4)] (ft^2)	Utilities Trenching Land Disturbance[(5)] (ft^2)	Total Land Disturbance (ft^2)
Athletic Fields[(6)]	60	300,000	390,000	Not Applicable	Not Applicable	Not Applicable	Not Applicable	8,400	398,400
Chapel	106	26,500	53,000	135,000	5,300	16,600	8,300	1,200	219,400
Child Development Center[(7)]	104	26,000	52,000	121,000	5,200	16,600	8,300	1,200	204,800
Clinic[(8)]	20	5,000	10,000	80,000	1,000	8,000	4,000	600	103,600
Leadership Development Center	72	18,000	36,000	273,000	3,600	14,400	7,200	1,800	336,000
Munitions and Hazardous Materials Gate[(9)]	2	0	0	15,000	100	3,000	1,500	2,400	22,000
New Visitors Center	4	1,000	2,000	14,400	200	3,600	1,800	600	22,600
Totals	368	376,500	543,000	638,900	15,400	62,200	31,100	16,200	1,306,800

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and preparation areas.

(2) Parking Lot size is estimated on 300 ft^2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.

(3) Total Land Disturbance for Landscaping Areas is estimated at 20 percent of the Building Area, and provides contingency for contractor lay-down and preparation areas.

(4) Sidewalks length is assumed to be the full perimeter length of the building (with building lengths assumed to be two-times the width). Walkway length is assumed to be two-times the full perimeter length of the building. Total Land Disturbance for Walkways and Sidewalks is estimated assuming a width of 12-feet of disturbance to install 6-foot wide walkways and sidewalks, providing contingency for contractor lay-down and preparation areas.

(5) Total Land Disturbance for Utilities Trenching is estimated assuming a width of 6-feet of disturbance to install required utilities, providing contingency for contractor lay-down and preparation areas.

(6) Total Land Disturbance for the Athletic Fields is calculated as the area of the fields plus 30 percent contingency for contractor lay-down and preparation areas.

(7) Land Disturbance for the playground area is included in Parking Lot Land Disturbance.

(8) Parking for clinic includes spaces for 85 additional medical professionals and 85 additional patients that may visit the clinic.

(9) Parking Lot Land Disturbance for the Munitions and Hazardous Materials Gate is based on two vehicle parking spaces and a delivery vehicle pull-off and inspection area, totaling 15,000 ft^2.

APPENDIX B

DEMOLITION GROUND DISTURBANCE DETAIL TABLE

Demolition Project Ground Disturbance Detail Table									
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Total Building Land Disturbance[(1)] (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated [(2)] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[(3)] (ft^3)**	**Other Demolition Components[(4)] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**
Building 19 (Camana Club)	70	7,150	14,300	15	400	46,450	5,130	9,212	60,792
Building 40 (North Gate Guard House)	5	465	930	15	100	6,300	100	25,000	31,400
Building 41 (North Gate Visitors Center)	10	765	1,530	15	100	6,400	100	10,000	16,500
Building 902 (Old Base Exchange)	60	5,615	11,230	15	220	31,310	810	4,232	36,352
Building 1620 (Radar Relay Building)	20	1,600	3,200	15	100	11,550	100	3,570	15,220
Building 1631 (Electrical Shop)	30	3,025	6,050	20	200	15,200	100	0	15,300
Building 1632 (Reserve Force Building)	10	600	1,200	15	100	5,630	110	0	5,740
Marine Compound Concrete Foundations[(5)]	15	1,450	2,900	0	0	3,000	0	0	3,000
Totals	220	20,670	41,340	Not Applicable	1,220	125,840	6,450	52,014	123,512

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and debris stockpile areas.

(2) If specific information was unknown, Total Building Demolition Debris/Waste Generated was based on the following assumptions:

- Building foundations (concrete and aggregate) would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.
- Roof materials are 18 inches thick and are wooden frame/deck with asphalt shingles
- Exterior walls are concrete block and are 18 inches thick
- Interior walls are wood frame with dry-wall surfaces and are 6 inches thick.

(3) Buildings were inspected and volumes of Bathroom, Kitchen and Other Integrated Components were estimated by review of as built drawings and/or visual observation.

(4) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities. Buildings sites and surrounding areas were inspected and volumes of Demolition Components were estimated by review of as built drawings and/or visual observation.

(5) Marine Compound Concrete Foundations would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.

APPENDIX C

CONSTRUCTION AND OPERATION AIR EMISSIONS CALCULATIONS

Construction and Demolition Emissions with Maximizing Assumptions **FINAL**

Buckley AFB Proposed Construction II Environmental Assessment (EA)

Proj. No.: 4668030003
Construction Duration: 588 days of disturbed ground
riod Total Combined Project Days 588 days of disturbed ground

1. Bulldozing

E1 = (0.75) ([1.0(s)^1.5) / (M)^1.4]
Hours = Q / R
AP-42 11.9-2

		Units	Source
- Input -			
1 Cycle =	2	minutes	H
s =	6.9	%	A
M =	7.9	%	A
d (moist) =	96	lb/ft3	B
HC =	0.121	lb/hr	D
NOx =	1.26	lb/hr	D
SO_2 =	0.137	lb/hr	D
CO =	0.346	lb/hr	D
C =	15.3	yd3	H, J
Q =	5000	tons	U
Control =	80	%	P
- Output -			
Hours =	8		
E1 =	0.8	lb/hr	
R =	594.9	tons/hr	
PM_{10} =	0.00	tpy (unc)	
PM_{10} =	0.00	tpy (con)	
HC =	0.00	tpy	
NOx =	0.01	tpy	
SO_2 =	0.00	tpy	
CO =	0.00	tpy	

2. Compacting

E1 = (0.75) ([1.0(s)^1.5) / (M)^1.4]
E2 = E1 / (d * R * 27)/2000)
Hours = Q / (R * d * 27) * 2000
AP-42 11.9-2

		Units	Source
- Input -			
s =	6.9	%	A
M =	7.9	%	A
d (moist) =	96	lb/ft3	B
R =	962	CY/hr	I
HC =	0.067	lb/hr	D
NOx =	0.862	lb/hr	D
SO_2 =	0.067	lb/hr	D
CO =	0.304	lb/hr	D
Q =	13,044	tons	U
Control =	50	%	P
- Output -			
Hours =	10.5		
E1 =	0.75	lb/hr	
E2 =	6.0E-04	lb/ton	
PM_{10} =	0.00	tpy (unc)	
PM_{10} =	0.00	tpy (con)	
HC =	0.00	tpy	
NOx =	0.00	tpy	
SO_2 =	0.00	tpy	
CO =	0.00	tpy	

3. Grading

E = (0.60)(0.051)(S^2)
Hours = VMT / S
AP-42 11.9-2

		Units	Source
- Input -			
S =	7.1	mph	A
HC =	0.04	lb/hr	D
NOx =	0.713	lb/hr	D
SO_2 =	0.086	lb/hr	D
CO =	0.151	lb/hr	D
VMT =	150		U
Control =	80	%	P
- Output -			
Hours =	21		
E =	1.54	lb/VMT	
PM_{10} =	0.12	tpy (unc)	
PM_{10} =	0.02	tpy (con)	
HC =	0.00	tpy	
NOx =	0.01	tpy	
SO_2 =	0.00	tpy	
CO =	0.00	tpy	

4. Material Handling (loading)

E = (0.35) (0.0032) [(U/5)^1.3) / (M/2)^1.4]
Hours = Q / R
AP-42 13.2-4

		Units	Source
- Input -			
U =	10.0	mph	G
M =	2.1	%	A
HC =	0.25	lb/hr	D
NOx =	1.89	lb/hr	D
SO_2 =	0.182	lb/hr	D
CO =	0.572	lb/hr	D
Q =	40,763	tons	U
R =	144	tons/hr	H
Control =	50	%	P
- Output -			
E =	2.6E-03	lb/ton	
Hours =	283		
PM_{10} =	0.05	tpy (unc)	
PM_{10} =	0.03	tpy (con)	
HC =	0.0	tpy	
NOx =	0.3	tpy	
SO_2 =	0.0	tpy	
CO =	0.1	tpy	

5. Scraper - Unloading Topsoil

E = (0.0104) lb/ton
Hours = Q / R
AP-42 11.9

		Units	Source
- Input -			
Exhaust emissions are included in scraper loading and paved/unpaved roads			
HC =	0	lb/hr	
NOx =	0	lb/hr	
SO_2 =	0	lb/hr	
CO =	0	lb/hr	
Q =	5,000	tons	U
R =	65	tons/hr	
Control =	80	%	P
- Output -			
E =	1.04E-02	lb/ton	
Hours =	77		
PM_{10} =	0.03	tpy (unc)	
PM_{10} =	0.01	tpy (con)	
HC =	0.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.0	tpy	

6. Trackout

E = 47.1 lb/day

		Units	Source
MAG	1994		
- Input -			
D =	760	days	C
E =	47.1	lb/day	E
Each access point			
Assume 1 access point			
Control =	50	%	P
- Output -			
Hours =	18240		
PM_{10} =	17.90	tpy (unc)	
PM_{10} =	8.95	tpy (con)	

7. Unpaved Road Travel

E = [2.6)(s/12)^0.8(W/3)^0.7
/ (M/0.2)^0.3] [(365 - p) / 365]
Hours = VMT / S
AP-42 13.2.2

		Units	Source
- Input -			
s =	11	%	A
M =	0.2	%	A
Scraper W =	65	tons	K
Truck W =	30	tons	M
p =	90	days	A
HC =	0.192	lb/hr	D
NOx =	2.314	lb/hr	D
SO_2 =	0.454	lb/hr	D
CO =	1.794	lb/hr	D
Scraper VMT =	0		U
Truck VMT =	1,571		U
Control =	50	%	P
- Output -			
Hours =	105		
Scraper E =	6.25	lb/VMT	
Truck E =	4.59	lb/VMT	
PM_{10} =	3.61	tpy (unc)	
PM_{10} =	1.80	tpy (con)	
HC =	0.01	tpy	
NOx =	0.1	tpy	
SO_2 =	0.0	tpy	
CO =	0.1	tpy	

8. Windblown Dust

E = 136 lb/acre-yr

		Units	Source
MAG	1999		
- Input -			
A =	31	acres	
D =	760	days	
E =	136	lb/acre-yr	F
- Output -			
PM_{10} =	4.4	tpy	

Buckley AFB Proposed Construction II Environmental Assessment (EA)

Proj. No.: 4668030003
Construction Duration: 540 days of disturbed ground
riod Total Combined Project Days 540 days of disturbed ground

9. Portable Crusher

E = 0.0024 lb/ton
Hours = Q / R
AP-42 11.19.2-2

		Units	Source
- Input -			
E =	0.0024	lb/ton	A
Q =	0	tons	U
R =	250	tons/hr	M
Control =	80	%	A
- Output -			
Hours =	0		
PM_{10} =	0.00	tpy (unc)	
PM_{10} =	0.00	tpy (con)	

10. Demolition

E = 0.011 lb/sq foot demolished
Hours = Q / R
EPA

		Units	Source
- Input -			
E =	0.011	lb/ton	A
Q =	20,670	sq foot	U
Control =	50	%	A
- Output -			
PM_{10} =	0.1	tpy (unc)	
PM_{10} =	0.06	tpy (con)	

11. Material Handling (unloading)

E = (0.35) (0.0032) [(U/5)^1.3) / (M/2)^1.4]
Hours = Q / R
AP-42 13.2-4

		Units	Source
- Input -			
U =	10.0	mph	G
M =	2.1	%	A
HC =	0.25	lb/hr	D
NOx =	1.89	lb/hr	D
SO_2 =	0.182	lb/hr	D
CO =	0.572	lb/hr	D
Q =	53,807	tons	U
R =	144	tons/hr	
Control =	50	%	P
- Output -			
E =	2.6E-03	lb/ton	
Hours =	374		
PM_{10} =	0.07	tpy (unc)	
PM_{10} =	0.03	tpy (con)	
HC =	0.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.0	tpy	

12. Paved Road Travel - Trucks

E = (0.016) [(sL/2)^0.65] [(W/3)^1.5]
Hours = VMT / S
AP-42 13.2.1

		Units	Source
- Input -			
sL =	0.1	g/m2	A
S =	35.0	mph	A
W =	30.0	tons	M
HC =	0.192	lb/hr	D
NOx =	2.314	lb/hr	D
SO_2 =	0.454	lb/hr	D
CO =	1.794	lb/hr	D
VMT =	22,482		U
Control =	0	%	P
- Output -			
Hours =	642		
E =	0.07	lb/VMT	
PM_{10} =	0.8	tpy (unc)	
PM_{10} =	0.8	tpy (con)	
HC =	0.1	tpy	
NOx =	0.7	tpy	
SO_2 =	0.1	tpy	
CO =	0.6	tpy	

13. Paved Road Travel - Cars/Light Trucks

E = (0.016) [(sL/2)^0.65] [(W/3)^1.5]
Hours = VMT / S
AP-42 13.2.1

		Units	Source
- Input -			
sL =	0.1	g/m2	A
S =	35.0	mph	A
W =	2.0	tons	M
HC =	0.0012	lb/mile	D
NOx =	0.0013	lb/mile	D
SO_2 =	0.00015	lb/mile	D
CO =	0.021	lb/mile	D
VMT =	41,216		U
Control =	0	%	P
- Output -			
Hours =	1178		
E =	0.00	lb/VMT	
PM_{10} =	0.0	tpy (unc)	
PM_{10} =	0.0	tpy (con)	
HC =	0.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.4	tpy	

14. Paving

		Units	Source
- Input -			
Q =	22,570	tons	U
R =	24.0	tons/hr	M
PM =	0.139	lb/truck-hr	D
HC =	0.152	lb/truck-hr	D
NOx =	1.691	lb/truck-hr	D
SO_2 =	0.143	lb/truck-hr	D
CO =	0.675	lb/truck-hr	D
- Output -			
Truck Hours =	940		
PM_{10} =	0.1	tpy	
HC =	0.1	tpy	
NOx =	0.8	tpy	
SO_2 =	0.1	tpy	
CO =	0.3	tpy	

15. Painting/Emulsified Asphalt/Adhesive

		Units	Source
- Input -			
Q =	1.0	tons	U
R =	0.1	tons/hr	O
PM =	0.256	lb/hr	D, O
HC =	0.192	lb/hr	D, O
NOx =	2.314	lb/hr	D
SO_2 =	0.454	lb/hr	D
CO =	1.794	lb/hr	D
- Output -			
Hours =	10.2		
PM_{10} =	0.0	tpy	
HC =	1.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.0	tpy	

2004 PROJECT EMISSIONS TOTAL

PM_{10} (unc) =	27	tpy
PM_{10} (con) =	16	tpy
HC =	2	tpy
NOx =	2	tpy
SO_2 =	0.3	tpy
CO =	1	tpy

17. Concrete Batch Plants

AP-42 11.12-3 10/01

		Units	Source
- Input -			
Q =	0	tons	U
Q =	0	cy	
PM_{10} (unc) =	0.058	lb/cy	A
PM_{10} (con) =	0.030	lb/cy	A
- Output -			
PM_{10} =	0	tpy (unc)	
PM_{10} =	0	tpy (con)	

16. Milling

E=0.21(4.8)(18)^0.6
AP-42 11.2.2 5/83

		Units	Source
- Input -			
Q =	0	acres	U
R =	0.023	acres/hr	U
HC =	0.152	lb/hr	D
NOx =	1.691	lb/hr	D
SO_2 =	0.143	lb/hr	D
CO =	0.675	lb/hr	D
- Output -			
Hours =	0.0		
PM_{10} =	0.0	tpy	
HC =	0.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.0	tpy	

17. Asphalt Batch Plants

AP-42 11.1 12/00

		Units	Source
- Input -			
Q =	0	tons	U
PM_{10} (unc) =	4.5	lb/ton	A
PM_{10} (con) =	0.027	lb/ton	A
HC =	0.036	lb/ton	A
NOx =	0.12	lb/ton	A
SO_2 =	0.088	lb/ton	A
CO =	0.4	lb/ton	A
- Output -			
PM_{10} =	0.0	tpy (unc)	
PM_{10} =	0.0	tpy (con)	
HC =	0.0	tpy	
NOx =	0.0	tpy	
SO_2 =	0.0	tpy	
CO =	0.0	tpy	

Name: **Buckley AFB Proposed Construction II Environmental Assessment (EA)**
Proj No.: **4668030003**

Construction Duration: 760 days of disturbed ground
2004 Period Total Combined Project Days: 760 days of disturbed ground

NOTE: Quantities were assumed through engineering estimation and judgment related to similar construction and demolition projects. The remaining quantities for each category were derived from the assumed number.

Item No.	Description	Construction Activity	Quantity	Unit	Derived Quantity	Unit	Basis for Derivation [2]
1	Building Demolition	Material Handling (loading)[1]	6,810	TONS	6,810	TONS	From Demolition Project Quantity of Materials Calculations Spreadsheet.
		Material Handling (unloading)[1]			6,810	TONS	Derivation assumes same quantity loaded is unloaded.
		Unpaved Road Travel - Trucks			568	VMT	Derivation assumes truck capacity of 24 tons, 1.0 mile unpaved distance to stockpile.
		Paved Road Travel			4,540	VMT	Derivation assumes truck capacity of 24 tons, 8.0 mile paved distance to stockpile.
2	Unclassified Excavation	Material Handling (loading)[1]	16,133	CY	20,908	TONS	From Construction Project Quantity of Materials Calculations Spreadsheet.
		Material Handling (unloading)[1]			20,908	TONS	Derivation assumes same quantity loaded is unloaded.
		Unpaved Road Travel - Trucks			871	VMT	Derivation assumes truck capacity of 24 tons, 0.5 mile unpaved distance to stockpile.
		Paved Road Travel			1,742	VMT	Derivation assumes truck capacity of 24 tons, 1.0 mile paved distance to stockpile.
3	Aggregate Backfill	Material Handling (loading)	10,171	CY	0	TONS	Quantity assumed. Assume aggregate density of 95 lb/ft3. Assume loading emissions included in supplier's permit.
		Material Handling (unloading)			13,044	TONS	Assume loaded material is unloaded.
	Assume all crushed stone	Unpaved Road Travel - Trucks			109	VMT	Derivation assumes truck capacity of 24 tons, 0.1 mile unpaved travel distance to stockpile.
	Delivery of raw materials to stockpile	Paved Road Travel			3,805	VMT	Assumed 3.5 mile paved travel distance to site, truck capacity 24 tons.
4	Aggregate Backfill	Material Handling (loading)	10,171	CY	13,044	TONS	Quantity assumed. Assume aggregate density of 95 lb/ft3.
		Material Handling (unloading)			13,044	TONS	Assume loaded material is unloaded.
	Assume all crushed stone	Unpaved Road Travel - Trucks			109	VMT	Derivation assumes truck capacity of 24 tons, 0.1 mile unpaved distance.
	From stockpile to construction area	Screening			0	TONS	Assumed off-site facility.
		Crushing			0	TONS	Assumed off-site facility.
		Paved Road Travel			0	VMT	Assumed no paved road travel.
		Compacting			13,044	TONS	100% of aggregate is compacted.
5	Delivery of Asphalt	Paving	16,403	TONS	16,403	TONS	Quantity assumed. Tailpipe emissions only.
		Unpaved Road Travel - Trucks			137	VMT	Derivation assumes truck capacity of 24 tons, 0.1 mile unpaved distance to onsite facility.
		Paved Road Travel			4,784	VMT	Assumed 3.5 mile paved travel distance, truck capacity 24 tons.
6	Delivery of Concrete	Paving	6,167	TONS	6,167	TONS	Quantity assumed. Tailpipe emissions only.
		Unpaved Road Travel - Trucks			51	VMT	Derivation assumes truck capacity of 24 tons, 0.1 mile unpaved distance to onsite facility.
		Paved Road Travel			1,799	VMT	Assumed 3.5 mile paved travel distance, truck capacity 24 tons.
7	Bituminous Tack Coat (Emulsified Asphalt)	Asphalt Emulsion	50,744	SY	1	TONS	Quantity assumed. Tailpipe and VOC emissions from emul. asphalt app. Assume 0.1 gal/yd, 8.345 lb/gal, 4.5 % VOC.
		Unpaved Road Travel - Trucks			0	VMT	Assumed no unpaved road travel.
		Paved Road Travel			48	VMT	Assumed 3.5 miles paved travel distance to job site. Assumed a tank truck individually delivers material to each paving project. Assumed application of material via tank truck with spray-bar requires 1.0 mile of travel.
8	Pavement Marking	Painting	39,360	LF	0.07	TONS	Quantity assumed. Tailpipe and VOC emissions from paint application. Assume 0.1 gal/SY. From MSDS. VOC content of 0.66 lb/gallon.
9	Delivery Traffic	Paved Road Travel[3]	1,472	VEH	10,304	VMT	Assume 3.5 mile travel distance
		Unpaved Road Travel - Trucks			294	VMT	Assumed 0.1 mile travel distance.
10	Construction Employee Traffic	Paved Road Travel - Cars/Light Trucks[3]	5,888	VEH	41,216	VMT	Assume 3.5 mile travel distance
		Unpaved Road Travel - Cars/Light Trucks			0	VMT	Assumed no unpaved road travel.

Buckley AFB Proposed Construction II EA	1. Bulldozing[4]	5,000	TONS	}	
4668030003	2. Compacting	13,044	TONS	}	
	3. Grading[4]	150	VMT	}	
	4. Material Handling (loading)	40,763	TONS	}	
	5. Scraper (unloading)[4]	5,000	TONS	}	
	6. Trackout - 2 access points	760	DAYS	}	These quantities are totaled here and linked to the Project Emissions spreadsheet for each
	7. Unpaved Road Travel - Scrapers[5]	0	VMT	}	project.
	Unpaved Road Travel - Trucks	1,571	VMT	}	
	8. Windblown Dust[6]	31	ACRES	}	
	9. Crushing	0	TONS	}	
	10. Screening	0	TONS	}	
	11. Material Handling (unloading)	53,807	TONS	}	
	12. Paved Road Travel - Trucks	22,482	VMT	}	
	13. Paved Road Travel - Cars/Light Trucks	41,216	TONS	}	
	14. Paving - Asphalt and Concrete	22,570	TONS	}	
	15. Emulsified Asphalt	1	TONS	}	
	15. Painting	0	TONS	}	
	16. Milling	0	ACRES	}	
	17. Asphalt Batch Plants	0	TONS	}	
	18. Concrete Batch Plants	0	TONS	}	

1 From AP-42 suggestion, excavation (loader and backhoe) emissions can use Eqn. 13.2-4 (batch drop).

2. Nearly all calculations assume an average soil density of 96 lb/ft3 (moist) for converting to tons, except for aggregate and concrete.

3. Miles traveled for Construction Delivery and Employee Traffic is assumed to be 3.5 miles one-way. Basis for assumption is that Deliveries and Employees would be traveling on major arteries (assumed as I-225), which is approximately 3.5 miles from entrance to Buckley AFB, and that this traffic would occur daily to a job-sites elsewhere if not commuting to Buckley AFB. Therefore, to avoid double counting, and to assess only new miles traveled for work at Buckley AFB, miles traveled are assumed as 3.5 miles (one-way) to and from I-225.

4. For Bulldozing and Scraping, sites are relatively flat with little to no noticable slope. 5,000 tons of earth-moving is assumed for each of these activties. Scraper miles are assumed to be 10 miles per construction/demolition project, totaling 150 miles.

5. Unpaved Road Travel for Scapers is included in scaper unloading (above).

6. For wind erosion, assume all construction projects are in progress at any one time = 31 acres.

References

A Compilation of Air Pollution Emission Factors, Vol. I, EPA, 2002.
B Chemical Engineer's Handbook, Perry, 1997.
C City of Phoenix Engineering Data, 1998-99.
D Compilation of Air Pollution Emission Factors, Mobile Sources Vol. II, EPA, 1995.
E "Maricopa Association of Governments (MAG) 1994 Regional PM10 Emission Inventory", MAG, 1994.
F "Wind Criteria and Associated Emissions for Regional Particulate Matter Modeling", MAG, June 30, 1997.
G Climatic Atlas of the United States, U.S. Department of Commerce, 1983.
H Standard Handbook for Civil Engineers, Chapter 13: Earthwork, Merrit, 1998.
I Caterpillar Performance Handbook, Edition 14, Page 296, Caterpillar Tractor Co., 1999.
J D8R Bulldozer Specifications, Caterpillar Tractor, 1999 (literature courtesy of Wagner Equipment Co..).
K 63Scraper Specifications, Caterpillar Tractor, 1999 (literature courtesy of Wagner Equipment Co..).
L 815 Compactor Specifications, Caterpillar Tractor, 1999 (literature courtesy of Wagner Equipment Co..).
M Lafarge Corporation, 1999.
N Reasonable assumption based on discussions with Construction Engineers.
O MSDS Data - TMT - Pathway, LLC, Black WB TTP1952D Type II.
P Engineering Estimate
Q E-mail Response - Capacities of aggregate haul trucks and cement mix trucks, LaFarge, 1999.
R ADOT, 1990. ADOT Standard Specifications for Road and Bridge Construction. Phoenix, Arizona.
S Site Work & Landscape Cost Data, 17th Edition, RS Means Company, Inc., Kingston, MA. 1998.
T MSDS Data: Cobitco--Emulsified Asphalt, Cationic. Denver, CO. 1990.
U Quantities were assumed through engineering estimation and judgment related to similar construction and demolition projects.
V Compilation of Air Pollution Emission Factors, Vol. I, Section 11.2.2, EPA, 1983.

[1] Except where noted, nearly all calculations assume an average soil density of 96 lb/ft3 (moist) for converting from volume to tons.

APPENDIX C: Construction and Operation Air Emissions Calculations
Quantity of Material Calculation Sheets

Construction Project Finished Areas

Project	Project Duration (days)	Maximum Building Area (ft^2)	Parking Lot Area (ft^2)	Landscaping Area (ft^2)	Walkway Area (ft^2)	Sidewalk Area (ft^2)	Total Area (ft^2)
Athletic Fields[6]	60	300,000	Not Applicable	Not Applicable	Not Applicable	Not Applicable	300,000
Chapel	106	26,500	90,000	2,650	8,300	4,150	131,600
Child Development Center[7]	104	26,000	81,000	2,600	8,300	4,150	122,050
Clinic	20	5,000	53,333	500	4,000	2,000	64,833
Leadership Development Center	72	18,000	182,000	1,800	7,200	3,600	212,600
Munitions and Hazardous Materials Entrance Gate[8]	2	0	10,000	50	1,500	750	12,300
New Visitors Center	4	1,000	9,600	100	1,800	900	13,400
TOTALS	368	376,500	425,933	7,700	31,100	15,550	856,783

Construction Project Ground Disturbance Details

Project	Project Duration (days)	Maximum Building Area (ft^2)	Total Building Land Disturbance[1] (ft^2)	Parking Lot Land Disturbance[2] (ft^2)	Landscaping Land Disturbance[3] (ft^2)	Walkway Land Disturbance[4] (ft^2)	Sidewalk Land Disturbance[4] (ft^2)	Utilities Trenching Land Disturbance[5] (ft^2)	Total Land Disturbance (ft^2)
Athletic Fields[6]	60	300,000	390,000	Not Applicable	Not Applicable	Not Applicable	Not Applicable	8,400	398,400
Chapel	106	26,500	53,000	135,000	5,300	16,600	8,300	1,200	219,400
Child Development Center[7]	104	26,000	52,000	121,500	5,200	16,600	8,300	1,200	204,800
Clinic	20	5,000	10,000	80,000	1,000	8,000	4,000	600	103,600
Leadership Development Center	72	18,000	36,000	273,000	3,600	14,400	7,200	1,800	336,000
Munitions and Hazardous Materials Entrance Gate[8]	2	0	0	15,000	100	3,000	1,500	2,400	22,000
New Visitors Center	4	1,000	2,000	14,400	200	3,600	1,800	600	22,600
TOTALS	368	376,500	543,000	638,900	15,400	62,200	31,100	16,200	1,306,800

(1) Total Building Land Disturbance is estimated at two-times the Building Area, providing contingency for contractor lay-down and preparation areas.

(2) Parking Lot size is estimated on 300 ft^2 per parking space, including turning areas. Total Land Disturbance is estimated at 1.5-times the Parking Lot Areas, providing contingency for contractor lay-down and preparation areas.

(3) Total Land Disturbance for Landscaping Areas is estimated at 20% of the Building Area, and provides contingency for contractor lay-down and preparation areas.

(4) Sidewalks length is assumed to be the full perimeter length of the building (with building lengths assumed to be two-times the width). Walkway length is assumed to be two-times the full perimeter length of the building. Total Land Disturbance for Walkways and Sidewalks is estimated assuming a width of 12-feet of disturbance to install 6-foot wide walkways and sidewalks, providing contingency for contractor lay-down and preparation areas.

(5) Total Land Disturbance for Utilities Trenching is estimated assuming a width of 6-feet of disturbance to install required utilities, providing contingency for contractor lay-down and preparation areas.

(6) Total Land Disturbance for the Athletic Fields is calculated as the area of the fields plus 30% contingency for contractor lay-down and preparation areas.

(7) Land Disturbance for the playground area is included in Parking Lot Land Disturbance.

(8) Parking Lot Land Disturbance for the Munitions and Hazardous Materials Entrance Gate is based on two vehicle parking spaces and a delivery vehicle pull-off and inspection area totaling 15,000 ft^2.

APPENDIX C: Construction and Operation Air Emissions Calculations
Quantity of Material Calculation Sheets

Construction Projects Quantity of Materials Calculations

Project	Excavation (CY)[1]	Delivery of Aggregate to Stockpile (CY)	Aggregate Moved from Stockpile to Construction Area (CY)	Delivery of Concrete (TONS)	Delivery of Asphalt (TONS)	Application of Bituminous Tack Coat (SY)	Pavement Marking (LF)[6,7]	Delivery Traffic (VEH)[8]	Construction Employee Traffic (VEH)	Delivery Traffic (VEH/day)	Construction Employee Traffic (VEH/day)
Athletic Fields	4,919	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	Not Applicable	240	960	4	16
Chapel	2,709	2,388	2,388	2,083	3,511	10,922	9,000	424	1,696	4	16
Child Development Center	2,528	2,212	2,212	2,047	3,180	9,922	6,000	416	1,664	4	16
Clinic	1,279	1,191	1,191	433	2,058	6,370	5,100	80	320	4	16
Leadership Development Center	4,148	3,904	3,904	1,441	6,865	21,022	18,000	288	1,152	4	16
Munitions and Hazardous Materials Entrance Gate	272	227	227	25	404	1,278	300	8	32	4	16
New Visitors Center	279	246	246	103	397	1,267	960	16	64	4	16
TOTALS	16,133	10,168	10,168	6,131	16,415	50,781	39,360	1,472	5,888	28	112

(1) CY - Cubic Yard
(2) SY - Square Yard
(3) Assume material is crushed and screened. CY - Cubic Yard
(4) Assume 50% contingency for footers
(5) SF - Square Foot
(6) LF - Linear Foot
(7) Assumes 30 Linear Feet of Paint Applied per Parking Space
(8) VEH - Number of Vehicles

Assumptions:

Areas disturbed are scraped and graded to =	4	inches to remove existing vegetation and grade to level sites.
Aggregate Required =	6	inches per square foot of finished area (includes building, parking lot, walkway and sidewalk areas).
Concrete Thickness =	6	inches for building foundations + 50% contingency for footers.
Concrete Thickness =	4	inches for sidewalks.
Concrete Density =	196	lbs/ft^3.
Asphalt Thickness =	6	inches for parking lots.
Asphalt Thickness =	4	inches for walkways.
Asphalt Density =	147	lbs/ft^3.

APPENDIX C: Construction and Operation Air Emissions Calculations
Quantity of Material Calculation Sheets

Demolition Project Quantity of Materials Calculations													
Project	**Project Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[3] (ft^3)**	**Other Demolition Components[4] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons)[6]**	**Demolition Traffic (VEH)[6]**	**Demolition Employee Traffic (VEH)**	**Demolition Traffic (VEH/day)**	**Demolition Employee Traffic (VEH/day)**
Building 19 (Camana Club) Demolition	70	7,150	15	400	46,450	5,130	9,212	60,792	2,758	280	1,120	4	16
Building 40 (North Gate Visitors Center) Demolition	5	465	15	100	6,300	100	25,000	31,400	323	20	80	4	16
Building 41 (North Gate Guard House) Demolition	10	765	15	100	6,400	100	10,000	16,500	528	40	160	4	16
Building 902 (Old Base Exchange) Demolition	60	5,615	15	220	31,310	810	4,232	36,352	1,564	240	960	4	16
Building 1620 (Radar Relay Building) Demolition	20	1,600	15	100	11,550	100	3,570	15,220	733	80	320	4	16
Building 1631 (Electrical Shop) Demolition	30	3,025	20	200	15,200	100	0	15,300	575	120	480	4	16
Building 1632 (Reserve Force Building) Demolition	10	600	15	100	5,630	110	0	5,740	217	40	160	4	16
Marine Compound Concrete Foundations Demolition[5]	15	1,450	0	0	3,000	0	0	3,000	113	60	240	4	16
Totals	220	20,670	110	1,220	125,840	6,450	52,014	184,304	6,810	880	3,520	32	128

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).
(2) If specific information was unknown, Total Building Demolition Debris/Waste Generated is based on the following assumptions:
- Building foundations (concrete and aggregate) would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.
- Roof materials are 18 inches thick and are wooden frame/deck with asphalt shingles
- Exterior walls are concrete block and are 18 inches thick
- Interior walls are wood frame with dry-wall surfaces and are 4 inches thick.

(3) Buildings were inspected and volumes of Bathroom, Kitchen and Other Integrated Components were estimated by review of as built drawings and/or visual observation.
(4) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities. Buildings sites and surrounding areas were inspected and volumes of Demolition Components were estimated by review of as built drawings and/or visual observation.
(5) Marine Compound Concrete Foundations would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.
(6) Bulk densities for calculations were assumed as follows:
- Structural Building Demolition Debris/Waste at 75 lbs/ft3
- Bathroom, Kitchen and Other Integrated Components at 100 lbs/ft4
- Other Demolition Components at 165 lbs/ft5

APPENDIX D

CONSTRUCTION AND DEMOLITION DUST SUPPRESSION WATER USE TABLE

Construction and Demolition Dust Suppression Water Use Table				
Project	**Project Ground Disturbance Duration (days)**	**Total Building/Land Disturbance (ft^2)**	**Total Building/ Land Disturbance (acres)**	**Total Water Use (Gallons) [(1)]**
Construct Athletic Fields	60	398,400	9.15	274,380
Construct Chapel	106	219,400	5.04	266,947
Construct Child Development Center	104	204,800	4.70	244,481
Construct Clinic	20	103,600	2.38	23,783
Construct Leadership Development Center	72	336,000	7.71	277,686
Construct Munitions and Hazardous Materials Gate	2	22,000	0.51	505
Construct New Visitors Center	4	22,600	0.52	1,038
Building 19 (Camana Club) Demolition	70	14,300	0.33	11,490
Building 40 (North Gate Guard House) Demolition	5	930	0.02	53
Building 41 (North Gate Visitors Center) Demolition	10	1,530	0.04	176
Building 902 (Old Base Exchange) Demolition	60	11,230	0.26	7,734
Building 1620 (Radar Relay Building) Demolition	20	3,200	0.07	735
Building 1631 (Electrical Shop) Demolition	30	6,050	0.14	2,083
Building 1632 (Reserve Force Building) Demolition	10	1,200	0.03	138
Marine Compound Concrete Foundations Demolition	15	2,900	0.07	499
Total Water Use Increase				1,111,728

Based on an irrigation rate of 500 gallons/acre/day of construction.

APPENDIX E

CONSTRUCTION AND DEMOLITION PROJECT
SOLID WASTE GENERATOR TABLE

Construction and Demolition Project Solid Waste Generation Table

Project	Project Ground Disturbance Duration (days)	Building Area (ft^2)	Building Height (ft)	Interior Wall Length (ft)	Total Building Demolition Debris/Waste Generated[2] (ft^3)	Bathroom, Kitchen and Other Integrated Components[3] (ft^3)	Other Demolition Components[4] (ft^3)	Total Demolition Debris/Waste Generated (ft^3)	Total Demolition Debris/Waste Generated (tons)[5]
Construct Athletic Fields	60	300,000	NA[1]	NA	NA	NA	NA	NA	15
Construct Chapel	106	26,500	NA	NA	NA	NA	NA	NA	26
Construct Child Development Center	104	26,000	NA	NA	NA	NA	NA	NA	26
Construct Clinic	20	5,000	NA	NA	NA	NA	NA	NA	5
Construct Leadership Development Center	72	18,000	NA	NA	NA	NA	NA	NA	18
Construct Munitions and Hazardous Materials Gate	2	0	NA	NA	NA	NA	NA	NA	1
Construct New Visitors Center	4	1,000	NA	NA	NA	NA	NA	NA	1
Building 19 (Camana Club) Demolition	70	7,150	15	400	46,450	5,130	9,212	60,792	2,758
Building 40 (North Gate Guard House) Demolition	5	465	15	100	6,300	100	25,000	31,400	323

Construction and Demolition Project Solid Waste Generation Table									
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[(2)] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[(3)] (ft^3)**	**Other Demolition Components[(4)] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons) [(5)]**
Building 41 (North Gate Visitors Center) Demolition	10	765	15	100	6,400	100	10,000	16,500	528
Building 902 (Old Base Exchange) Demolition	60	5,615	15	220	31,310	810	4,232	36,352	1,564
Building 1620 (Radar Relay Building) Demolition	20	1,600	15	100	11,550	100	3,570	15,220	733
Building 1631 (Electrical Shop) Demolition	30	3,025	20	200	15,200	100	0	15,300	575
Building 1632 (Reserve Force Building) Demolition	10	600	15	100	5,630	110	0	5,740	217
Marine Compound Concrete Foundations Demolition[(6)]	15	1,450	0	0	3,000	0	0	3,000	112
Totals	588	397,670	Not	1,220	125,840	6,450	52,014	184,304	6,902

Construction and Demolition Project Solid Waste Generation Table									
Project	**Project Ground Disturbance Duration (days)**	**Building Area (ft^2)**	**Building Height (ft)**	**Interior Wall Length (ft)**	**Total Building Demolition Debris/Waste Generated[2] (ft^3)**	**Bathroom, Kitchen and Other Integrated Components[3] (ft^3)**	**Other Demolition Components[4] (ft^3)**	**Total Demolition Debris/Waste Generated (ft^3)**	**Total Demolition Debris/Waste Generated (tons)[5]**
			Applicable						

(1) NA – Not Applicable (Solid waste generation for construction projects assume 500 lbs of solid waste generation per day of construction activity).

(2) If specific information was unknown, Total Building Demolition Debris/Waste Generated is based on the following assumptions:

- Building foundations (concrete and aggregate) would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.
- Roof materials are 18 inches thick and are wodden frame/deck with asphalt shingles
- Exterior walls are concrete block and are 18 inches thick
- Interior walls are wood frame with dry-wall surfaces and are 4 inches thick.

(3) Buildings were inspected and volumes of Bathroom, Kitchen and Other Integrated Components were estimated by review of as built drawings and/or visual observation.

(4) Other Demolition Components may consist of paving materials, sidewalks, walkways and other general waste generated through demolition activities. Buildings sites and surrounding areas were inspected and volumes of Demolition Components were estimated by review of as built drawings and/or visual observation.

(5) Bulk densities for calculations were assumed as follows:

- Structural Building Demolition Debris/Waste at 75 lbs/ft^3
- Bathroom, Kitchen and Other Integrated Components at 100 lbs/ft^3
- Other Demolition Components at 165 lbs/ft^3.

(6) Marine Compound Concrete Foundations would be removed to 24 inches, assuming 18 inches of aggregate and six inches of concrete.

APPENDIX F

AIRFORCE FORM 813's

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS:

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO *(Environmental Planning Function)*	2. FROM *(Proponent organization and functional address symbol)*	2a. TELEPHONE NO.
460 CES/CEVP	460 MDS/SGA	(303) 677-6136

3. TITLE OF PROPOSED ACTION
Addition/Alteration to BAFB Clinic (Bldg 600)

4. PURPOSE AND NEED FOR ACTION *(Identify decision to be made and need date)*
To meet space shortfalls at the current clinic.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES *(DOPAA) (Provide sufficient details for evaluation of the total action.)*
Addition to (4,511 sq ft) and alteration of (5,388 sq ft) the existing clinic (Bldg 600). Alternatives: No action.

6. PROPONENT APPROVAL *(Name and Grade)*	6a. SIGNATURE	6b. DATE
Richard J. Reiser, Major		

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY.

(Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE *(Noise, accident potential, encroachment, etc.)* not anticipated		✓		
8. AIR QUALITY *(Emissions, attainment status, state implementation plan, etc.)*			✓	
9. WATER RESOURCES *(Quality, quantity, source, etc.)*			✓	
10. SAFETY AND OCCUPATIONAL HEALTH *(Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)*		✓		
11. HAZARDOUS MATERIALS/WASTE *(Use/storage/generation, solid waste, etc.)*		✓		
12. BIOLOGICAL RESOURCES *(Wetlands/floodplains, threatened or endangered species, etc.)*			✓	
13. CULTURAL RESOURCES *(Native American burial sites, archaeological, historical, etc.)*		✓		
14. GEOLOGY AND SOILS *(Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		✓		
15. SOCIOECONOMIC *(Employment/population projections, school and local fiscal impacts, etc.)*		✓		
16. OTHER *(Potential impacts not addressed above.)* Cumulative to be addressed in EA				

SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17. [ ] PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # _____ ; OR
[✓] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION *(Name and Grade)*	19a. SIGNATURE	19b. DATE
Reese Sturm GS-12		9/16/03

05-0631

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU053001

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Athletic Fields

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Provide an area on base for playing organized athletics. The current areas are too small for the number of personnel who seeking athletic opportunities on the base.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	C Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*) Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*)		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct athletic fields. This project is currently programmed for in FY 05. This action will require an environmental assessment.

NO ACTION ALTERNATIVE: No construction of additional athletic fields would take place and there would be inadequate facilities for outdoor athletics for base residents and assigned personnel. personnel would likely drive their cars off base to pursue outdoor athletic opportunities.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	750-172	CRWU053001	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT	COST
ATHLETIC FIELDS	LS			
CONSTRUCT NEW BALL FIELDS	EA	2		
FOOTBALL/SOCCER ATHLETIC FIELD	EA	1		
TRACK ATHLETIC FIELD	EA	1		
SUPPORTING FACILITIES				
PUBLIC TOILETS	SM	92		
PAVEMENTS AND PARKING	SP	160		
UTILITIES	LS			
LIGHTING	LS			
FENCING	M	3,600		
SUBTOTAL				
CONTINGENCY (5.0 %)				
TOTAL CONTRACT COST				
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)				
TOTAL REQUEST				
TOTAL REQUEST (ROUNDED)				

10. Description of Proposed Construction: Outdoor baseball,football,and track fields with bleachers, lighting, fencing and public toilets. Include utilities, lighting, parking, access, and site preparation.

11. REQUIREMENT: 4 LS ADEQUATE: LS SUBSTANDARD: 2 LS

PROJECT: Construct two new baseball fields, one new football/soccer field,and one new running track. (New Mission)

REQUIREMENT: Properly sized and configured athletic fields are required to provide space for voluntary participation in HQ Air Force Services Agency recognized fitness and sports programs. The September 2000 Services' Needs Validation Study recommended additional fields be constructed. Additional fields are needed for the increasing on-base population. The SECAF and CSAF established Air Force Space Command (AFSPC) as the installation host effective 1 October 2000.

CURRENT SITUATION: Buckley AFB presently has two unlighted softball fields which do not match the dimensions required for regulation baseball play. Additionally these fields are in very poor condition and are riddled with prairie dog holes. With the addition of over 385 new military personnel, there will be very limited opportunities for on-base league play.

IMPACT IF NOT PROVIDED: Military personnel and their families will be required to continue to use off-base facilities for baseball, football/soccer and track, paying rent for the use of off-base fields. On-base play using existing substandard fields also occasions the risk of injury to players. The lack of lighting and adequate toilet facilities will continue to result in very limited utilization and lost opportunities to improve morale, fitness and mission performance.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	750-172	CRWU053001	

ADDITIONAL: A preliminary analysis of reasonable options for accomplishing this project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates that only one option, new construction, that will meet operational requirements. Because of this, a full economic analysis was not performed. A Certificate of Exception has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col William D. Valenti, 719-556-7633.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	ATHLETIC FIELDS

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT [illegible]
35996	750-172	CRWU053001	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e): [redacted]

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Start 05 MAR

(5) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project that will be provided from other N/A

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU043006

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Chapel Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Provide an area on base for religious services and education to base personnel. The current space is too small for the number of personnel who attend Sunday services.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	Charles G. Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc))*		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)*		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct a 20,716 square foot Chapel Center. This project is currently programmed for FY 05. This action will require an environmental assessment.

ALTERNATIVE ACTION 1:

Install an approximately 7,000 square foot temporary modular unit pending the construction of the Chapel has been implemented.

NO ACTION ALTERNATIVE: No construction, additions, or alterations would take place and there would be inadequate space to provide religious services to Air Force personnel. Also, the prairie dog and burrowing habitat would remain unchanged.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of any prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
CHAPEL CENTER FACILITY	LS		
CHAPEL CENTER	SM	2,423	1,696
ANTITERRORISM/FORCE PROTECTION	SM	2,423	10
SUPPORTING FACILITIES			
SITE IMPROVEMENTS	LS		
PAVEMENTS	LS		
UTILITIES	LS		
COMMUNICATIONS SUPPORT	LS		
MOBILIZATION AND PERMITS	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)			

10. Description of Proposed Construction: Single-story steel frame structure with reinforced concrete foundation and slab for expansive soils, slit-face CMU exterior with finish system accents and standing seam metal roof. Space for worship, administration and religious education. Includes utilities, access, parking, site preparation, telecommunications prewiring and low-level Antiterrorism/Force Protection.

Air Conditioning: 400 KW.

11. REQUIREMENT: 2,423 SM ADEQUATE: 0 SM SUBSTANDARD: 546 SM

PROJECT: Construct a Chapel Center (New Mission).

REQUIREMENT: A 300 seat chapel center is required to provide ministry, counseling services, and religious education to meet the needs of permanent party personnel and their dependents assigned to Buckley AFB. The chapel center will be multi-functional in design to accomodate use by other base organizations. Air Force Space Command became the base host on 1 Oct 00 per direction from the SECAF and the CSAF. The transition plan has authorized the standup of an Air Base Wing to support the active duty military and their dependents. An on-base chapel center is required to meet the moral and spiritual, counseling, and religious education needs of active duty military personnel and their families. The facility is sized for 2482 active duty members. Estimated dependent population is 3,413. Total population served is 5,895. Installation is authorized a 300 seat Chapel Center per the USAF "Religious Facility Design Guide", Feburary 2000.

CURRENT SITUATION: Buckley Air Force Base has a temporary installation chapel with no religious education facilities. Active duty personnel and their families attend services off base. Limited on base counseling and religious education is available.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	[redacted]

There are no permanent facilities suitable for alteration. Space for funeral arangements is made in off base religious facilities since the sanctuary is limited in seating capacity. The modular space used does not lend itself to the atmosphere normally found in facilities designed to the construction and interior design standards prescribed by Air Force policy.

IMPACT IF NOT PROVIDED: Many personnel will seek ministry, religious education and counseling from various congregations in the Denver area. The single airmen assigned to this installation, many of whom lack a car of their own, will still need to use the substandard modular facilities. The cost of the modular space is not economical over the years. The military chaplains will still need to provide ministry and counseling services in facilities severely undersized for the requirement. Funeral services will need to be conducted off base in facilities sized for the services. The temporary, modular space will produce an unneccessary hardship on the Chaplain Service while impacting the Buckley community.

ADDITIONAL: This project meets the scope/criteria specified in Air Force Handbook 32-1084, "Facility Requirements" and the Air Force "Religious Facilities Design Guide". A preliminary analysis of reasonable options for accommodating this project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates there is only one option, new construction, that will meet operational requirements. Because of this a full economic analysis was not performed. A Certificate of Exemption has been prepared. Base Civil Engineer: Lt Col Alfred C. Scharff, 303.677.6501. Chapel Center: 2,423 SM = 26,081 SF.

JOINT USE CERTIFICATION: This facility is programmed for joint use with the Army, Navy and Marine Corps; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHAPEL CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	730-773	CRWU043006	[redacted]

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Contract Award

(5) Construction Start 05 FEB

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST ($000)
COMMUNICATIONS	3080	5	[redacted]
FURNISHINGS	3400	5	[redacted]

1. COMPONENT AIR FORCE	FY 2005 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION	BUCKLEY AIR FORCE BASE, COLORADO	
4. PROJECT TITLE	CHAPEL CENTER	7. PROJECT NUMBER CRWU 04-3006

EXISTING FACILITIES/DETAILED DEFICIENCY DATA SHEET
Requirements and assets summary.

1. **SCOPE OF FY 2005 REQUEST:** 2,423 SM Chapel Center (Cat Code 730-773)

2. **MISSION:** Establish a new Air Force Space Command (AFSPC) Air Base Wing at Buckley AFB in accordance with SECAF and CSAF guidance (Ref PAD 00-01 and PBD 727).

3. **REQUIREMENT (SM):** 2,243 Square Meters authorized per Air Force handbook 32-1084, Facilities Requirements", Chapter 14 and HQ AFCEE's AF Religious Facilities Design Guide.

4. **FUNCTIONAL BREAKOUT OF REQUIREMENTS:**

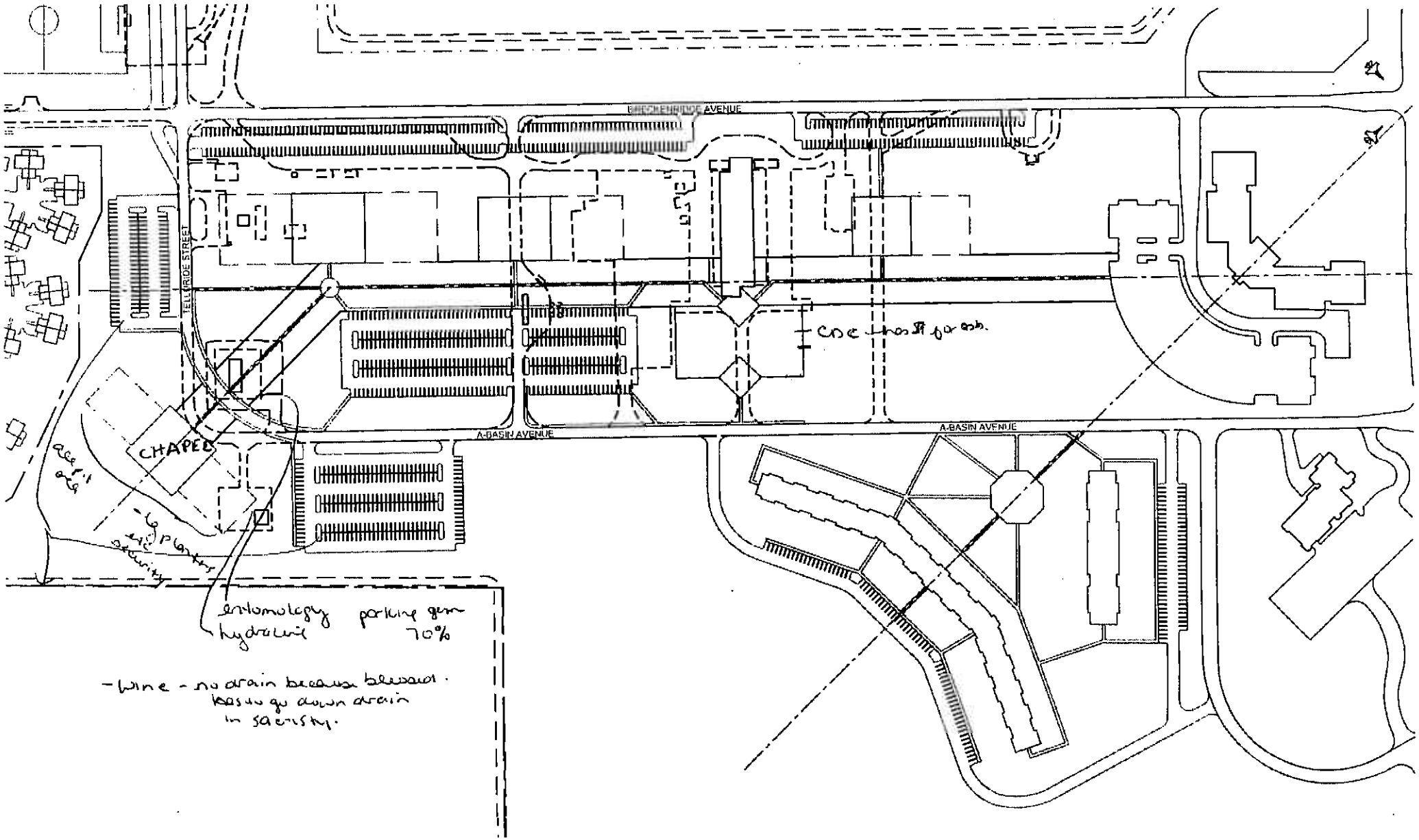
Type of Space		SM	CAT CODE
Worship Center		786	730-773
Narthex	(137)		
Chancel	(94)		
Nave	(362)		
Multi Faith worship center	(42)		
Blessed Sacrament	(23)		
Sacristy	(28)		
Baptistery	(9)		
Choir Changing Room	(21)		
Bride's Room	(11)		
Cry Room	(11)		
Multimedia Control Center	(11)		
Storage	(23)		
Coat Room	(14)		
Administrative Spaces		235	730-773
Reception Area	(19)		
Receptionist	(3)		
Chaplain Waiting Room	(19)		
Wing Chaplain Office	(17)		
Secretary	(3)		
Chaplain Offices (3)	(52)		
Reserve/Auxiliary Chaplain	(17)		
Parish Coordinator	(11)		
NCOIC	(11)		
Administrative Support	(11)		
Staff Office	(11)		
Conference room	(23)		
Copy/File Room	(19)		
Break Room	(19)		

1. COMPONENT AIR FORCE	FY 2003 CONSTRUCTION PROJECT DATA	2. DATE
3. INSTALLATION AND LOCATION: BUCKLEY AIR FORCE BASE, COLORADO		
4. PROJECT TITLE: CHAPEL CENTER		7. PROJECT NUMBER: CRWU 04-3006

EXISTING FACILITIES/DETAILED DEFICIENCY DATA SHEET
Requirements and assets summary.

4. FUNCTIONAL BREAKOUT OF REQUIREMEMTS, Continued:

Type of Space		SM	CAT CODE
Education Spaces		802	730-773
Religious education Coordinator	(11)		
Music Coordinator	(11)		
Library	(19)		
Multipurpose Room	(372)		
Large Classroom Space	(77)		
Small Classroom Space	(158)		
Pre-School Classroom	(62)		
Kitchen	(77)		
Storage	(15)		
Net Total Space		1822	
33% for Circulation, Mech. & Restrooms		601	
Gross Total Space		2423	


TELLURIDE STREET
A-BASIN AVENUE
A-BASIN AVENUE
CHAPEL
entomology
hydraulic
parking gen
70%
- wine - no drain because blizzard.
has to go down drain
in security.

05-0626

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
CRWU43007

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	7-6819

3. TITLE OF PROPOSED ACTION
Child Development Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct an additional Child Development Center. The existing facility is too small to meet the needs of dependent children of military personnel projected to be assigned to live and work at the base.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See Attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles G. Nicely, GS-11	Charles G. Nicely	26 Apr 02

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*) Fugitive dust from construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Potential Stormwater impact			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*) Prairie Dog/Burrowing Owl habitat			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*)		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.		
		PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _See remarks_____: OR
	X	PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED. See Remarks

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	Elise L. Sherva	30 Apr 02

AF FORM 813 – CONTINUATION

PROPOSED ACTION: Construct a Child Development Center to support 198 children.. This project is currently programmed for in FY 05. This action will require an environmental assessment.

Alternate Action 1. Construct an addition to the existing Child Development Center. This alternate was no pursued because of insufficient land availability at the existing site. The existing center is also not located in close proximity to 332 new housing units that are planned for the base. Many of the children that are projected to use the new facility are expected to live in the new housing area.

NO ACTION ALTERNATIVE: No construction of additional Child Development Center space would result in children of assigned personnel being denied an opportunity to attend a Child Development Center.

ENVIRONMENTAL CONSEQUENCES:

This action will require the removal and relocation of prairie dogs. This requires the approval and consultation with the Natural Resources Manager: 7-69337
This action cannot occur when burrowing owls are in residence in the prairie dog burrows.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT
35996	740-884	CRWU043007	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
CHILD DEVELOPMENT CENTER, 198 PN	LS		
CHILD DEVELOPMENT CENTER	SM	1,386	
ANTITERRORISM/FORCE PROTECTION	SM	1,386	
SUPPORTING FACILITIES			
SITE IMPROVEMENTS	LS		
PAVEMENTS	LS		
UTILITIES	LS		
COMMUNICATIONS SUPPORT	LS		
SUBTOTAL			
CONTINGENCY (5.0 %)			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (5.7 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			

10. Description of Proposed Construction: Single-story structural steel frame with reinforced concrete foundation and floor slab for expansive soils. Brick exterior, finish system accents, and standing seam metal roof. Includes pick-up/drop-off area, outdoor play area, utility spaces, utilities, parking, access, site preparation, pre-wiring for communications and low-level Antiterrorism/Force Protection measures.

Air Conditioning: 220 KW.

11. REQUIREMENT: 214 LS ADEQUATE: 214 LS SUBSTANDARD: LS

PROJECT: Construct a Child Development Center (New Mission)

REQUIREMENT: Adequate child care facilities are required to accommodate the dependent children of increased numbers of USAF personnel to be assigned to Buckley Air Force Base concurrent with the establishment of a new active duty Air Base Wing. The SECAF and CSAF established Air Force Space Command as the installation host effective 1 October 2000 (ref Program Action Directive 00-01).

CURRENT SITUATION: The existing Child Development Center at Buckley AFB was constructed for a capacity of 214 children. This Center is utilized to its maximum capacity at the present time with an active waiting list of approximately 130 children. The addition of another 385-plus active duty personnel will generate an estimated demand for an additional 125 spaces. This will create a deficit of approximately 255 spaces. Many service members are currently unable to enroll their children in the existing Child Development Center due to the lack of capacity. Numerous child care centers exist in the metropolitan area; however, only one of these is accredited to Air Force standards. Fees charged by this facility are two to three times the amount charged by the present Child Development Center and are unaffordable for most base personnel. It is Air Force and Department of Defense policy to limit individual facilities to serve no more than 305 children.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	740-884	CRWU043007	

IMPACT IF NOT PROVIDED: If a new Child Development Center is not provided, families must continue to use expensive off-base programs or leave their children with unlicensed baby-sitters. Families continue to expend up to $2,500 per child per year plus travel expenses to use off-base facilities. Since off-base center schedules do not typically accommodate the shifts or long working hours of military personnel, they impose hardships on the military personnel forced to use them. With service members on call for duty continuously, it is imperative that they have reliable, convenient, well-run, safe, healthy & affordable child care facilities. The existing facility on base is too small for the needs.

ADDITIONAL: A preliminary analysis of reasonable options for accomplishingthis project (status quo, renovation, upgrade/removal, new construction, and/or leasing) was done. It indicates that only one option, new construction, will meet operational requirements. Because of this, a full economic analysis was not performed. A Certificate of Exception has been prepared. This project meets the criteria/scope specified in Part II of Military Handbook 1190, "Facility Planning and Design" and Air Force Handbook 32-1084, "Facility Requirements". Base Civil Engineer: Lt Col William D. Valenti, 719.556.7633. Child Development Center: 1,386 SM = 14,913 SF. Size Supports 198 Children.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	CHILD DEVELOPMENT CENTER 198 PN

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	740-884	CRWU043007	

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-SEP-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	BUCKLEY

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	

(4) Construction Start 04 SEP

(5) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project that will be provided from other
N/A

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol RCS.

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEVP	460 CES/CEC	303-677-9902

3. TITLE OF PROPOSED ACTION
Demolish Building 902

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Demolish building 902 because it falls in the Clear Zone.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action)
Proposed Action is to demolish a building that is in the Clear Zone. No-Action alternative: Leave building in place that cannot be used since they are in the Clear Zone. This would also conflict with Facilities Excellence.

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Daniel D. Kawamoto, GS-13	David D Kawamoto	23 Feb 04

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*) Removing buildings that are in the Clear Zone.- will meet regulator requirements.	X			
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.).* Short-term fugitive dust during construction			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) *Slight increase by removing impervious surface area*	X			
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*	X			
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential for Black-tailed prairie dog and/or burrowing owl			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)*		X		
16.OTHER (*Potential impacts not addressed above.)* Cumulative impacts would be addressed in the EA.				X

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION QUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____ or
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise Sherva, GS-12	Elise Sherva	2/25/04

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol RCS.

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEVP	460 CES/CEC	303-677-9902

3. TITLE OF PROPOSED ACTION
Demolish Old Marine Site buildings and foundations

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Demolish buildings and area foundations that are in the Clear zone.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action)
Proposed Action is to demolish buildings that are in the Clear Zone. No-Action alternative: Leave buildings in place that cannot be used since they are in the Clear Zone. This would also conflict with Facilities Excellence.

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Daniel D. Kawamoto, GS-13	Daniel D Kawamoto	23 Feb 04

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*) Removing buildings that are in the Clear Zone.- will meet regulator requirements.	X			
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.).* Short-term fugitive dust during construction			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) *Slight increase by removing impervious surface area*	X			
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)*	X			
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc)*		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential for Black-tailed prairie dog and/or burrowing owl			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)*		X		
16.OTHER (*Potential impacts not addressed above.)* Cumulative impacts would be addressed in the EA.				X

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION QUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____or
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise Sherva, GS-12	Elise Sherva	2/25/04

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	Report Control Symbol CRWU063003

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEV	460 CES/CEC	303-677-6819

3. TITLE OF PROPOSED ACTION
Leadership Development Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Construct a 17,631 SF Leadership Development Center. The facility is required to provide space for large meetings with video teleconferencing and the capability to serve catered meals in support of large meetings. The project is required to reduce the number of meetings that are repeated or held off base. Construction start required by Nov 2004.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action.
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Charles Nicely, GS-11	C Nicely	7 Jan 2003

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.)* Fugitive dust during construction;			X	
9. WATER RESOURCES (Quality, quantity, source, etc.) Stormwater during and after construction			X	
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)* Safety During construction			X	
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*). Use of hazardous materials during construction.			X	
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc)* Potential adverse effects to prairie dogs and/or burrowing owls.			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.)*		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)*		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.)* Assuming the additional employees currently reside in the local commuting area.		X		
16.OTHER (*Potential impacts not addressed above.)*		X		

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____: OR
- [X] PROPOSED ACTION DOES NOT QULIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise L. Sherva, GS-12	E Sherva	1/8/03

AF Form 813 Continuation

Project Title: Leadership Development Center

Proposed Action: Construct a 17,361 SF Leadership Development Center. Less than 10 new employees would be employed at this facility. Additional paved parking area would be required to support facility users. The facility is expected to accommodate up to 600 meeting attendees. It would have a food preparation area to support catering. The proposed location is south of the planned Wing Headquarters as depicted on the Base General Plan.

No Action Alternative: Do not construct a new Leadership Development Center. Meetings would continue to be held at the Air National Guard Facility per their scheduled activities.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	

9. COST ESTIMATES

ITEM	U/M	QUANTITY	UNIT
LEADERSHIP DEVELOPMENT CENTER	LS		
LEADERSHIP DEVELOPMENT CTR	SM	1,638	2,152
ANTITERRORISM FORCE DEVELOPMENT	SM	1,638	25
INTERIOR COMMUNICATIONS SUPPORT	LS		
SUPPORTING FACILITIES			
UTILITIES	LS		
PAVEMENTS	LS		
SITE IMPROVEMENTS	LS		
EXTERIOR COMMUNICATIONS SUPPORT	LS		
SPECIAL FOUNDATIONS FOR EXPANSIVE SOILS	LS		
SUBTOTAL			
TOTAL CONTRACT COST			
SUPERVISION, INSPECTION AND OVERHEAD (6.5 %)			
TOTAL REQUEST			
TOTAL REQUEST (ROUNDED)			
EQUIPMENT FROM OTHER APPROPRIATIONS (NON-ADD)			

10. Description of Proposed Construction: Single-story steel frame structure with reinforced concrete foundation and slab for expansive soils, split face concrete masonry unit (CMU) exterior and standing seam metal/single ply roof. Includes utilities, parking, road access, site improvements, pre-wiring for voice and local area networks, and minimum DoD force protection standards.

Air Conditioning: 289 KW.

11. REQUIREMENT: 6,198 SM ADEQUATE: 4,560 SM SUBSTANDARD: 0 SM

PROJECT: Construct a Leadership Development Center. (New Mission)

REQUIREMENT: The Secretary of the Air Force and the Chief of Staff of the Air Force designated Air Force Space Command as installation host at Buckley AFB effective October 2000. The 460th Air Base Wing stood up effective October 2001. An adequate Leadership Development Center is essential for providing Wing and supported organizations with space for conducting leadership development activities, similar large meetings, and video teleconferences. The structure will include dividable meeting and video teleconferencing space for up to 450 personnel. A kitchen capable of supporting the catering requirements of large meetings and official military functions is required. Due to the nature of supported missions at Buckley AFB, secure telecommunications and a facility having antiterrorist/force protection features are required.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	[redacted]

CURRENT SITUATION: Adequate facilities capable of hosting large meetings and video teleconferences are not available on base. Many of the supported organizations have missions that impact national security. Metro area facilities are not equipped with required secure telecommunications and do not provide the level of security required for hosting meetings concerning such missions. Large leadership development sessions are held in on-base facilities that are not sized to accommodate all attendees in a single session. Inadequately sized facilities require that meetings be replicated to provide all attendees an opportunity to interact with presenters. Such repetition is inefficient and costly. Many Wing hosted meetings are either held off post or are held at inadequate facilities borrowed from the ANG. Leadership Development facilities at bases outside the Metro area have limited availability and involve unacceptable travel times. Due to inadequate facilities, Officers, Non-Commissioned Officers, and civilian employees are missing valuable leadership development opportunities that are afforded personnel at more established bases.

IMPACT IF NOT PROVIDED: Officers, Non-Commissioned Officers, and civilian employees will continue to miss valuable leadership development opportunities. Personnel will expend additional time away from work in order to travel outside the metro area to attend leadership development functions, teleconferences, and other large meetings. Visiting personnel attending on-base meetings will expend excessive time seeking lunch at limited on base or at distant off base eateries. Wing hosted meetings, awards banquets, hail and farewells, and holiday events will continue to be held either off-base or at borrowed on-base facilities with décor, furnishings and kitchen capabilities that present formidable challenges.

ADDITIONAL: There are no criteria in AF Handbook 32-1084 for this facility. Criteria/Scope for the facility are based upon building codes for planned occupancy loads. A preliminary analysis of reasonable options for accomplishing this project to include status quo, renovation, upgrade/removal, new construction, and lease was completed. It indicates there is only one option that will satisfy statutory requirements and meet operational constraints. Because of this a full economic analysis was not performed. A Certificate of waiver has been prepared. Base Civil Engineer: Lt Col Alfred C. Scharff, (303) 677-6501. Leadership Development Center: 1,638 SM = 17,631 SF

JOINT USE CERTIFICATION: This facility is programmed for joint use with the Army, Navy and Marine Corps; however, it is fully funded by the Air Force.

1. COMPONENT	FY 2005 MILITARY CONSTRUCTION PROJECT DATA	2. DATE
AIR FORCE	(computer generated)	

3. INSTALLATION AND LOCATION	4. PROJECT TITLE
BUCKLEY AIR FORCE BASE, COLORADO	LEADERSHIP DEVELOPMENT CENTER

5. PROGRAM ELEMENT	6. CATEGORY CODE	7. PROJECT NUMBER	8. PROJECT COST ($000)
35996	610-249	CRWU063003	5,300

12. SUPPLEMENTAL DATA:

a. Estimated Design Data:

(1) Status:

(a) Date Design Started	01-NOV-03
(b) Parametric Cost Estimates used to develop costs	YES
* (c) Percent Complete as of 01 JAN 2004	
* (d) Date 35% Designed	01-MAY-04
(e) Date Design Complete	01-AUG-04
(f) Energy Study/Life-Cycle analysis was/will be performed	NO

(2) Basis:

(a) Standard or Definitive Design -	NO
(b) Where Design Was Most Recently Used -	

(3) Total Cost (c) = (a) + (b) or (d) + (e):

(a) Production of Plans and Specifications	[redacted]
(b) All Other Design Costs	[redacted]
(c) Total	[redacted]
(d) Contract	[redacted]
(e) In-house	[redacted]

(4) Construction Contract Award

(5) Construction Start

(6) Construction Completion

* Indicates completion of Project Definition with Parametric Cost Estimate which is comparable to traditional 35% design to ensure valid scope, cost and executability.

b. Equipment associated with this project provided from other appropriations:

EQUIPMENT NOMENCLATURE	PROCURING APPROPRIATION	FISCAL YEAR APPROPRIATED OR REQUESTED	COST ($000)
SYSTEMS FURNITURE	3400	2005	[redacted]
CHAIRS/TABLES	3400	2005	[redacted]
COMMUNICATIONS EQUIPMENT	3080	2005	[redacted]
KITCHEN EQUIPMENT	3400	2005	[redacted]

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol
RCS: 20934

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEVP	460 CES/CEC	303-677-9902

3. TITLE OF PROPOSED ACTION
Relocate Visitors Center

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date*).
Construct a new visitors center that is properly sized with adequate parking. The new Visitors Center would also be located "before" the guard entry gate.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action)
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Daniel D. Kawamoto, GS-13	Daniel D Kawamoto	23 Feb 04

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.*) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*). Potential fugitive dust during construction.			X	
9. WATER RESOURCES (Quality, quantity, source, etc.)		X		
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)		X		
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*)			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*) *Cumulative Impacts* would be addressed in the EA.				X

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION CUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____; or
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise Sherva, GS-12	Elise Sherva	2/25/04

AF FORM 813 – CONTINUATION – RELOCATE VISITORS CENTER

PROPOSED ACTION – Construct and operate a new visitors Center that would be approximately 2,000 square feet in size. Construction would include landscaping, construction of parking lots with the capacity of approximately 60 vehicles, berms. The existing visitor's center would be demolished. The existing guardhouse would either be demolished, with a new guardhouse being constructed or moved to the new location. Operations would remain similar (e.g, personnel increases would involve no more than four-five additional personnel.

NO ACTION ALTERNATIVE. Continue using the existing Visitors Center with limited parking. The safety risk to pedestrians would remain unchanged, along with the traffic congestion.

REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS	Report Control Symbol RCS.

INSTRUCTIONS: *Section I to be completed by Proponent; Sections II and II to be completed by Environmental Planning Function. Continue on Separate Sheets as necessary. Reference appropriate item number(s).*

SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function)	2. FROM (Proponent organization and functional address symbol)	2a. TELEPHONE NO.
460 CES/CEVP	460 CES/CEC	303-677-9902

3. TITLE OF PROPOSED ACTION
Upgrade the east gate

4. PURPOSE AND NEED FOR ACTION (*Identify decision to be made and need date).*
Provide a gate that is properly constructed to receive hazardous materials shipments, to include munitions.

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the total action)
See attached

6. PROPONENT APPROVAL (*Name and Grade*)	6a. SIGNATURE	6b. DATE
Daniel D. Kawamoto, GS-13	Daniel D Kawamoto	23 Feb 04

SECTIONII - PRELIMINARY ENVIRONMENTAL SURVEY. (*Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = Unknown effect.*	+	0	-	U
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (*Noise, accident potential, encroachment, etc.*)		X		
8. AIR QUALITY (*emissions, attainment status, state implementation plan, etc.*). Short-term fugitive dust during construction			X	
9. WATER RESOURCES (Quality, quantity, source, etc.)		X		
10. SAFETY AND OCCUPATIONAL HEALTH (*Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.*)	X			
11. HAZARDOUS MATERIALS/WASTE (*Use/storage/generation, solid waste, etc*)		X		
12. BIOLOGICAL RESOURCES (*Wetlands/floodplains, flora, fauna, etc*) Potential for Black-tailed prairie dog and/or burrowing owl			X	
13.CULTURAL RESOURCES (*Native American burial sites, archeological, historical, etc.*)		X		
14.GEOLOGY AND SOILS (*Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.*)		X		
15.SOCIOECONOMIC (*Employment/population projections, school and local fiscal impacts, etc.*)		X		
16.OTHER (*Potential impacts not addressed above.*) Cumulative impacts would be addressed in the EA.				X

SECTION III - ENVIRONMENTAL ANALSIS DETERMINATION

17.
- [ ] PROPOSED ACTION QUALIFIES FOR A CATEGORICAL EXCLUSION (CATEX #) _____or
- [X] PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALSIS IS REQUIRED.

18. REMARKS

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (*Name and Grade*)	19a. SIGNATURE	19b. DATE
Elise Sherva, GS-12	Elise Sherva	2/25/04

AF FORM 813 – CONTINUATION – GATE MODIFICATION AND CONSTRUCTION

PROPOSED ACTION – Improve the east Navy Alternate Gate, to include construction to bring it up to compliance.

New Gate: The proposed site would be on the east side of the base near the Naval Reserve Center, approximately 3000 feet southeast of the Navy gate. The inspection lane would be two lanes wide, with adequate parking for a delivery vehicle and Security Forces Personnel. This gate would only be used for hazardous materials shipments; therefore, it would not be manned nor would it require a guard gated. The proposed action includes paving the roadway through to Steamboat, where the trucks would have access to the Munitions facility. There would be no more than ten, with an average of four to five, deliveries per month using this gate. Due to the limited amount of deliveries a turnout lane would not be considered. This location minimizes the total on-base transit time and distance between entry point and the munitions storage area.

ALTERNATIVE ACTION 1 –Same as the proposed action, using gravel or dirt instead of asphalt paving. This is eliminated due to the potential for an impassable roadway during inclement weather.

ALTERNATIVE ACTION 2 – Modify the existing Naval Reserve Center Gate. This would involve widening the inbound, left-turning radius and would require relocation of a hydrant and upgrading the sliding gate. This was eliminated since it did not meet the safety distance criteria for munitions.

NO ACTION ALTERNATIVE. Continue using the existing gate that doesn't meet current Air Force requirements.

REQUIREMENTS AND RESTRICTIONS FOR ALTERNATIVE ACTION 1:

1. While wildlife is not anticipated, coordination with 460 CES/CEV, 303-677-6937 is required PRIOR to construction to ensure construction does not impact any burrowing owls (State threatened species) or black-tailed prairie dogs (Federal Candidate Species).

2. Best management practices will be used to minimize fugitive dust.

3. Work will be stopped immediately if any construction material or asbestos containing material is found during construction. 460 CES/CEV will be contacted immediately – 303-677-9977 or 303-677-9218.

APPENDIX G

PUBLIC COMMENTS

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Region 6

2000 South Holly Street
Denver, Colorado 80222
(303) 757-9932

April 23, 2004

Ms. Elise Sherva
460 CES/CEVP
660 South Aspen Street, Stop 86
Bldg. 1005, Room 254
Buckley Air Force Base, CO 80011-9551

Dear Ms. Sherva,

Thank you for the opportunity to provide comments pertaining to the Draft Environmental Assessment/FONSI for the demolition and construction and operation of multiple projects on Buckley Air Force Base, Colorado. I am sorry that these comments are late (due April 7th). We finally hired a new environmental project manager who can review the Buckley AFB documents (Jane Hann) and she just started the job the latter part of this month.

- Are the athletic fields only for on-base personnel use or could events be hosted there that could draw large crowds that could affect traffic flow off the base?
- There is no configuration on figure 2.4 that shows how the East Entrance Gate affects the traffic flow on State Highway 30. How is this to constructed and will traffic have to slow to allow the trucks to pull out onto the vehicle inspection lane? Does this altered transportation route increase the risk of accidental hazardous substance exposure to any high-risk receptors such as minority or low income populations (environmental justice of the operational activities should not be discounted upfront unless you can show that the route does not go near these neighborhoods), children (Executive Order 13045 Protection of Children From Environmental Health Risks and Safety Risks (amended by EO 13229), or sensitive habitats?
- Is there a Hazardous Waste Management Plan and a Spill Prevention Plan in place? This would help minimize the risk from a transportation-related accidental spill. The east gate is right along Sand Creek, a "significant water," and with the hazardous materials trucks being routed that way, I just want to make sure that the risk of an accidental spill is minimized and addressed.
- Standardize the terminology for the "East Entrance Gate" throughout the document. Is this the same as the new Telluride Gate and the "Munitions and Hazardous Materials Entrance Gate"? Also, use the term "State Highway 30" or 6th Avenue (or cross reference each other) consistently throughout the document so it makes it easier to follow instead of using one term in one area and the other in another.
- Air Quality, page 4-2, Is the significance threshold for "five tons per year" really for "any" criteria pollutant or is this for a specific one? Are NOx, and CO emissions from construction work going to be minimized? If so, how? Also, there is no mention of how the new air quality standards are addressed by Buckley AFB such as $PM_{2.5}$ and the 8-hour ozone level standard. Are

STATE OF COLORADO

DEPARTMENT OF TRANSPORTATION
Region 6

2000 South Holly Street
Denver, Colorado 80222
(303) 757-9932

these non-issues on Buckley AFB? CDOT is interested in these issues due to a new mandate that will require us to quantify CDOT-related air emissions in the air basin compared with other emissions.

- I noticed that Section 3, Affected Environment discusses impacts of the action. The resources should be discussed as they are within the "scope of the environmental review" and not as they are impacted. Impact discussions should be reserved for Section 4, Environmental Consequences or perhaps the two sections should be combined for each resource (a newly accepted format in recent years). Otherwise, it makes it tough to find where topics are described and impacts are consistently discussed.
- On page 4-2, Traffic Significant Thresholds, a random increase in traffic of 20% does not tell how that increase affects traffic flow. If the flow is already failing, then any increase would be significant. The significant threshold should be tied to the level of service that the roads are already experiencing and the remaining capacity of that road to handle future increases.
- In Section 4.2.1.3, Increased Traffic under Air Quality, only the traffic related to the clinic and the child development center are discussed. Will the athletic fields also cause increased traffic during organized events?
- In Section 4.2.2, Hazardous Materials, please discuss the new transportation route for the trucks and the change in exposure of the land uses, etc. along the route.
- I don't see a FONSI. Should it be included?

I have succeeded Brad Beckham as the Environmental Manager for CDOT Region 6. Mr. Beckham has moved over to our state-level office. Please refer your requests for comment to me in the future for ease of coordination. Thanks again for the opportunity to comment and we await your response to the above issues.

Sincerely,

Jim Paulmeno, Manager
Planning and Environmental-Region 6

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

Wayne E. Marusin
Deputy Commander
460 CES/CD
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

JUL 0 7 2004

Jim Paulmeno
Planning and Environmental-Region 6
Colorado Department of Transportation
2000 South Holly
Denver CO 80222

Dear Mr. Paulmeno

Thank you for your comments, which were dated 23 April 04, on the Environmental Assessment (EA) for the Proposed Construction II. Responses to your comments follow:

1. The athletic fields would be for on-base personnel (e.g., active duty military, guard units, reservists, and Department of Defense Civilians) and would not be open for public events. The following sections of the EA were modified for clarification.

- Section 2.1.1 - The following sentence was added - "The athletic fields may also be used for other events (i.e. concerts, tournaments, etc.), which would not be open to the public."

- Section 4.2.6.2 - The following text was added - "The athletic fields may be used for sports activities and other small events (i.e. concerts, tournaments, etc.), which would not be open to the public and would typically be scheduled after peak morning and evening traffic hours. Traffic increases due to personnel traveling to the installation after duty-hours would have a minimal impact on off-base traffic due to the following:

  - The limited number of individuals traveling to and from the base (teams are typically comprised of less than 20 individuals).
  - Some base personnel would be expected to remain on base after duty-hours to participate in activities, subsequently returning to residences after the peak evening traffic hour.
  - The time of the trips are outside the peak morning and evening traffic hours.
  - The frequency of trips is seasonal (all fields are outdoors and winter traffic for athletic field purposes would be negligible).

Forecasted future projects for Buckley AFB would result in construction of additional on-base housing. The overall impacts of off-base personnel traveling to the installation after duty-hours to participate in activities on the athletic fields would be further reduced following completion of the on-base housing construction. This is because individuals currently living off-

base would be provided with on-base living opportunities, and as a result, would not travel off-base for these purposes."

2. Hazardous materials are currently brought on base through the Mississippi Gate (near residential areas). Munitions are currently brought on base through an existing gate on the east side of the installation. The new gate would provide improved access and inspection capabilities. The following changes were made to the EA for clarification.

- Section 3.1.3, Socioeconomics and Environmental Justice was reconsidered in the EA as a resource that may be impacted (removed from Section 3.1, Resources Not Expected to be Impacted). New sections were added to Section 3 and 4 to capture the Existing Conditions and Environmental Consequences related to Socioeconomics and Environmental Justice, especially as related to deliveries of munitions and hazardous materials. Revised sections are included as an attachment.

- Section 4.2.6.3 - The first two paragraphs of Section 4.2.6.3 were revised to read as follows (text in italics was added and strike-through text was deleted):

"A new Munitions and Hazardous Materials Entrance Gate is proposed as part of this EA. The new Munitions and Hazardous Materials Entrance Gate would be located to the southwest of 6th Avenue, east and south of the old Navy Gate (an inactive/closed gate), and would provide access to Steamboat Avenue. The Proposed Action for the new Munitions and Hazardous Materials Entrance Gate includes installation of vehicle inspection area that would be used to inspect in- and outbound hazardous cargo vehicles. *The gate would be constructed with deceleration and turning lanes parallel to 6th Avenue, allowing large vehicles entering the base to safely merge out of the general traffic flow prior to turning.* The new gate would be primarily used to permit delivery of munitions and other hazardous cargo delivery vehicles onto the base, and as such, would receive infrequent and intermittent traffic. *Buckley AFB has a Draft Integrated Environmental Response Plan (IERP) and Hazardous Waste Management Plan (HWMP) that are in the final stages of review and publication. The procedures set forth in these plans would be implemented if an accidental spill from vehicles delivering or exporting materials through this gate were to occur.* Estimated delivery frequencies are less than ten deliveries per month, with an average of four to five deliveries per month. The gate will not be continually manned, and entities delivering cargo through the new gate would be required to provide advance notice to the installation to prepare for acceptance. ~~This circumstance may result in a decrease of the number of delivery vehicles entering the base through the North and South Gates.~~ *Munitions are currently transported onto the base using a gate located on the east side of the Base. Hazardous materials are currently transported on to the base using the Mississippi Gate, which is near a residential area. The proposed Munitions and Hazardous Materials Gate would be located along State Highway 30, which is a designated hazardous cargo route. Therefore, it was considered the best overall route even though the on-base transportation routes have increased. Therefore, the new gate would provide safer access for hazardous materials."*

Finally, Figure 2.4 was revised to show the configuration of the deceleration and turning lanes. The revised figure is included as an attachment.

3. Buckley Air Force Base (AFB) has a Draft Integrated Environmental Response Plan (IERP) and Hazardous Waste Management Plan (HWMP). The following sentence was added to Section 4.2.6.3 of the EA for clarification: "Buckley AFB has a Draft Integrated Environmental Response Plan (IERP), which includes a Spill Prevention Control and Countermeasure SPCC Plan, and a Hazardous Waste Management Plan (HWMP) that are in the final stages of review and publication. The procedures set forth in these plans would be implemented if an accidental spill from vehicles delivering or exporting materials through this gate were to occur."

4. The language in the EA has been standardized, "East Gate" has been replaced by "Munitions Hazardous Material Gate". Figures 1.2, 2.4, 3.1, and 3.3 were revised to reflect the name change. Also, references to State Highway 30 to 6th Avenue were changed throughout document and figures for consistency.

5. Air Quality

- The significance threshold is for all criteria pollutants. Facilities such as Buckley AFB, which are required to submit Air Pollution Emission Notices (APENs), the Colorado Department of Health and Environment, Title 5 CCR 1001-5, Regulation No. 3, Part A, Section II.C.2.a 3, defines a significant change in emissions requiring submittal of a revised APEN (II.C) as follows: "For sources emitting less than one hundred tons per year, a change in actual emissions of five tons per year or more...." Based on this regulation, the significance criteria selected for the air quality analysis is an emission increase for any criteria pollutant from a stationary source greater than five tons per year, consequently requiring revision to the existing APENs.

- Minimizing construction activity would be required if the proposed action exceeded the de minimis threshold. A Conformity Analysis was performed within the EA. The results of the analysis indicated that emissions remained below de minimis thresholds even when using conservatively high estimates of new emissions caused by the Proposed Action. Therefore, a full Conformity Determination was not required and was not conduced. If the analysis had indicated that the de minimus thresholds would be exceeded, additional emission controls (including controlling NO_x and CO emissions from construction activities) and efforts to shift the timing and duration of individual projects would have been considered to mitigate the emission estimates, and the analysis would have been repeated.

- The current conformity rule does not address $PM_{2.5}$, and the $PM_{2.5}$ standard has not been finalized; therefore, the EA has been prepared per the existing regulations. Buckley AFB would comply with the new standards, once they have been finalized and published.

- The current conformity rule does not address the 8-hour ozone standard. However, the rule does include the requirement to assess ozone precursors (VOCs and NO_x). Both VOCs and NO_x were evaluated in the EA through the Conformity Analysis. Again, the results of this analysis indicate that emissions created by the Proposed Action would be below de minimis thresholds.

  There are no methods to calculate ozone emissions from a source, only the ozone precursors VOCs and NO_x. The effects of ozone precursors on regional air quality would need to be assessed through photochemical air dispersion modeling. Since it was

determined that the conformity de minimis limits would not be exceeded, dispersion modeling was not necessary and was not conducted.

6. References to environmental consequences have been removed from Section 3 of the EA, Traffic Significant Thresholds.

7. The EA has been modified as follows:

- Significance criteria in Table 4.1 of the EA have been changed as follows:

  - On-base traffic increases creating overloading of existing security processing lanes, safety issues, congestion, time-delays etc.
  - On or off-base traffic increases exceeding the remaining future flow capacity in relation to the level of service that individual roadways currently provide. A copy of the revised row of the table is provided below:

Table 4.1: Environmental Significance Thresholds	
Environmental Resource	**Significance Threshold**
Traffic	• On-base traffic increases creating overloading of existing security processing lanes, safety issues, congestion, time-delays etc. • On or off-base traffic increases exceeding the remaining future flow capacity in relation to the level of service that individual roadways currently provide.

- Section 4.2.6.1, Off-Base portion has been revised to read - "The proposed action would create an estimated three percent increase in off-base traffic on 6th Avenue in both the east and westbound directions, and a five percent increase in traffic at E-470 exit 19. From visual observations of these roadways, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided, or otherwise create a significant off-base traffic impact at the North Gate."

- Section 4.2.6.1, The last paragraph of the On-Base portion has been revised to read - "Assuming an even distribution of these vehicles during the peak morning hour, the increase in traffic entering the North Gate would increase from 655 to 708 (an eight percent increase) and the existing capability to open and operate two inbound processing lanes would be adequate and would not overload existing security processing lanes, or create safety issues, congestion, time-delays etc. On-base road traffic in the vicinity of the North Gate would increase by the 53 additional vehicles entering the facility (primarily traveling on Aspen and A-Basin Avenues). The existing on-base roadways have sufficient capacity to handle this additional traffic flow, and from visual observations, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided."

- Section 4.2.6.2, The last final paragraph in Off-Base portion has been revised to read - "The Proposed Action would cause an estimated short-term construction/demolition increase of eight percent and a long-term six percent operational increase in off-base traffic on Mississippi Avenue in the westbound direction, and a one percent short-term

construction/demolition increase and a less than one percent long-term operational increase in off-base traffic at E470 exit 16. From visual observations of these roadways, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided, or otherwise create a significant off-base traffic impact at the South Gate."

- Section 4.2.6.2, The last sentences in the final paragraph in On-Base portion has been revised to read - "Assuming an even distribution of half of the construction and all of the commuter vehicles during the peak morning hour the existing capability to open and operate two inbound processing lanes would be adequate and would not overload existing security processing lanes, or create safety issues, congestion, time-delays etc. On-base traffic during construction and demolition projects in the vicinity of the South Gate would increased by approximately 150 additional vehicles entering the facility and accessing project sites directly off of Aspen Avenue, traveling west on A-Basin or Winter Park Avenues, or traveling east on Steamboat or Breckenridge Avenues. On-base road traffic in the vicinity of the South Gate would be increased by approximately 53 additional vehicles entering the facility (primarily traveling on Aspen and A-Basin Avenues) to access the Child Development Center and the expanded Clinic once they are operational. The existing on-base roadways have sufficient capacity to handle this additional traffic flow, and from visual observations, the Proposed Action would not be expected to exceed the remaining future flow capacity of these roadways in relation to the level of service currently provided."

8. Please refer to the response to your first comment. In addition, Section 4.2.1.3 of the EA was revised to read - "In addition, personnel who live off-base may make trips to Buckley AFB to participate in sports activities, or other organized events, after normal duty hours. However, traffic increases and resulting vehicular air emissions due to off-base personnel using the fields would have a minimal impact, as the number of individuals, and time of day and frequency of trips to the base would be insignificant. Although the fields may also be used for other events (i.e. concerts, tournaments, etc.), only base personnel would be allowed to attend these events (the general public would not be permitted to access these events). Therefore these events would have no or minimal impacts on air emissions."

9. Please refer to the response to your second comment. The EA has not been revised since this is not a new transportation route. The trucks delivering munitions to the base have been and are currently using a gate that is located near the proposed new gate.

10. The FONSI was inadvertently omitted and was mailed under a separate cover 9 Jun 04 for your review.

If you have any further questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 720-847-9077, email elise.sherva@buckley.af.mil, or Ms. Janet Wade, Environmental Flight Chief, at 720-847-9977, email janet.wade@buckley.af.mil.

Sincerely,

WAYNE E. MARUSIN, GS-13, DAFC
Deputy Commander

2 Atch:
1. Socioeconomics and Environmental Justice
2. Figure 2.4

3.14 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

Median income (household, family, and non-family) increased by greater than 40 percent between 1990 and 2000 in Arapahoe County (United States Census Bureau [USCB] 2003). Per capita personal income increased by approximately $9,370 to $28,147 (USCB 2003). Personal income in Arapahoe County between 1990 and 2000 increased 124 percent (Bureau of Economic Analysis [BEA] 2003). Nonfarm and farm personal income increased 124 percent to approximately $21.6 billion, and 447 percent to approximately $1.7 million, respectively, in 2000 (BEA 2003). The categories with the highest percent increase in earnings between 1990 and 2000 were State Government (325 percent); Transportation and Public Utilities (297 percent); Finance, Insurance, and Real Estate (264 percent); and Agricultural Services (211 percent) (BEA 2003). The mining industry lost earnings between 1990 and 2000 (-19.1 percent) (BEA 2003).

Total full-time and part-time employment increased 62 percent to 389,723 jobs in Arapahoe County between 1990 and 2000 (BEA 2003). The largest percentage employment gains between 1990 and 2000 were in Construction (163 percent); Transportation and Public Utilities (130 percent); State Government (123 percent); and Agricultural Services (108 percent) (BEA 2003). Job loss was reported for Mining (-41 percent) and Farms (-15 percent) (BEA 2003).

Poverty status between 1990 and 2000 in Arapahoe County remained approximately constant at 5.8 percent below the poverty threshold (USCB 2003).

Existing environmental justice conditions were analyzed using the United States Census 2000 summary data in accordance with the methods presented in the 1997 Air Force (AF) publication: "*Guide For Environmental Justice Analysis With The Environmental Impact Analysis Procedure*" (USAF, 1997a). Using this reference the analysis determined that 5.8% of the Arapahoe County population lives below the 2000 poverty level of $ 8,794 (for an individual) or $13,738 (family of three) (U.S. Census Bureau, 2000). Of the six census tracts surrounding Buckley AFB, four exceed the 5.8% mark. Analysis of the minority constituency of Arapahoe County within the six census tracts surrounding Buckley AFB determined that minorities comprised 24.7% of

Arapahoe County's population, and of these six census tracts, five exceed the 24.7% mark.

4.2.12 Socioeconomics and Environmental Justice

The Child Development Center would be capable of accommodating 192 children. It is assumed that 20 staff personnel would be required to operate the Child Development Center (based on approximately one individual staff member for every ten children). The expanded Clinic would allow an increase of approximately 85 medical personnel (from 35 individuals in 2000 to 120 individuals in FY04). Under these assumptions, employment at the base would increase by 105 individuals, an increase of one percent over the current employment status. This represents a positive direct socioeconomic effect.

Although several minority/low income areas exist adjacent to Buckley AFB, the Proposed Action construction and demolition projects would be occurring in an industrially zoned area. As concluded in this EA, the Proposed Action would have minor direct short-term effects on air quality, hazardous materials, hazardous wastes, utilities, biological resources, traffic, water resources, lead-based paint, and noise. Short-term direct moderate impacts may result related to asbestos, while minor long-term impacts could result for radon and hazardous wastes; and moderate long-term impacts could result for utilities, biological resources, traffic, and water resources. Of these, biological resource impacts would not affect minority/low-income areas because subsistence foraging does not occur on the installation. Water resource impacts would be negligible on minority/low-income areas if BMPs and discharge permits are followed. Asbestos, hazardous waste, hazardous materials, noise, lead-based paint, radon impacts are negligible for surrounding minority/low-income areas if BMPs are employed. Air quality impacts would be minor and dispersed throughout the western Arapahoe County airshed. Increases in utility services including gas, water, and electricity may result in a negligible long-term increase in utility usage for the surrounding community. Traffic increases as a result of the Proposed Action would cause slight increases in peak-hour arterial traffic volumes, but would not cause systemic traffic flow changes within adjacent

minority/low-income areas. Operation of the Munitions and Hazardous Materials Gate would eliminate the current circumstance where hazardous materials deliveries are entering the facility adjacent to a residential area. Implementation of the Proposed Action would reduce the potential for spills or other incidents related to delivery of hazardous materials in or around residential areas, presenting potential direct and indirect positive effects.

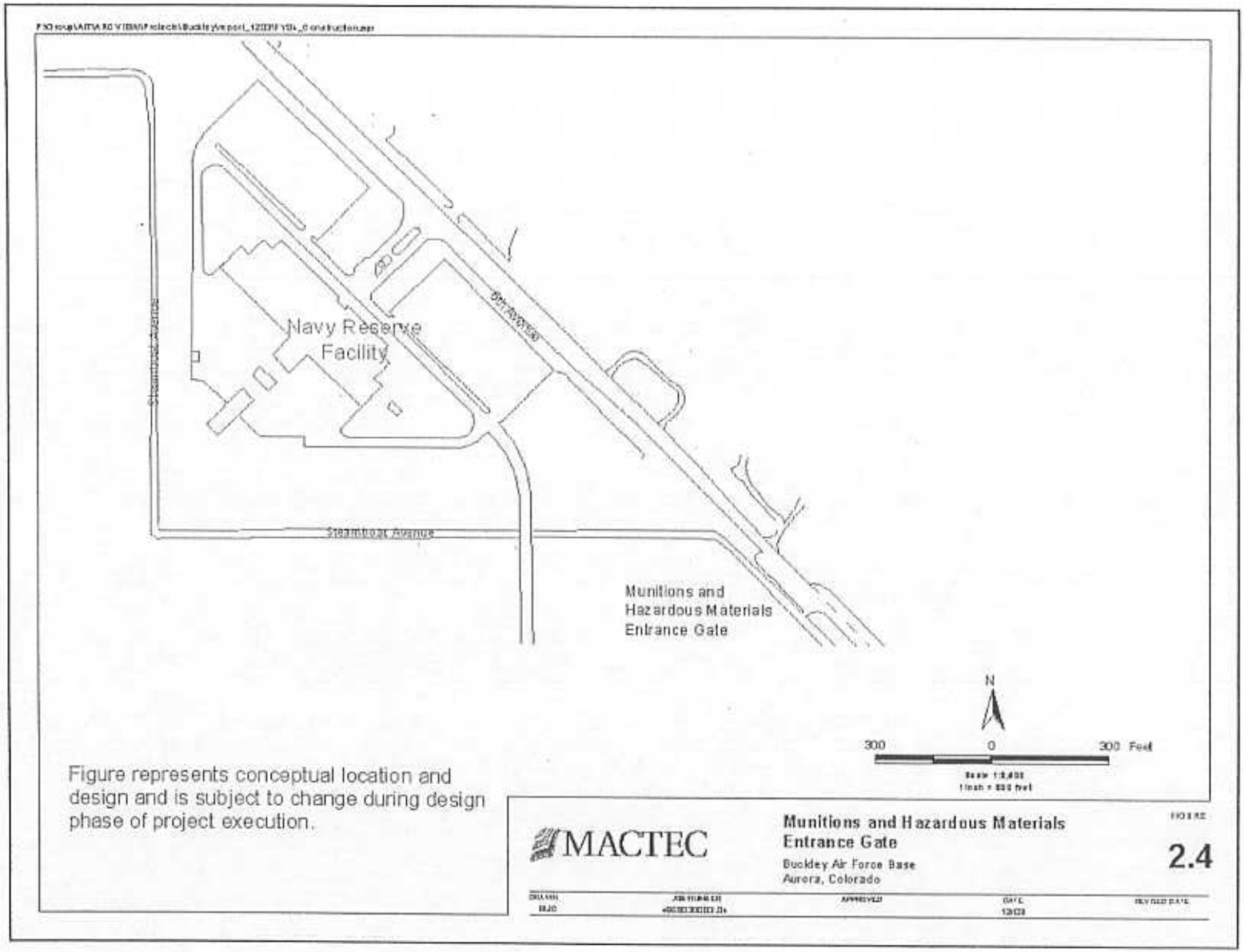


Figure represents conceptual location and design and is subject to change during design phase of project execution.

MACTEC

Munitions and Hazardous Materials Entrance Gate

Buckley Air Force Base
Aurora, Colorado

2.4

City of Aurora

Planning Department
15151 E. Alameda Parkway
Aurora, Colorado 80012
Phone: 303-739-7250
Fax: 303-739-7268
www.auroragov.org

March 31, 2004

Ms. Elise Sherva
Conservation Chief
460 CES/CEVP
660 S. Aspen Street, (Stop 86)
Building 1005, Room 254
Buckley AFB, CO 80011-9551

Dear Ms. Sherva:

RE: Comments on Draft EA and FONSI for Proposed Construction II Projects at BAFB

The staff for the City of Aurora, Colorado has reviewed the above-referenced document and has the following comments on the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for the Proposed Construction II Projects at Buckley Air Force Base (BAFB):

General Comments:

The proposed project involves the demolition of eight structures and the construction of seven facilities including athletic fields, new visitor center, chapel, child development center, leadership development center, and an expansion of the clinic. A new Munitions and Hazardous Materials Entrance Gate is also proposed to be located along State Highway 30, east of the north gate. Staff concurs with the assessment that there will be minimal environmental impacts resulting from the demolition, construction and operation of the proposed facilities. It was noted that some environmental consequences appear to be discussed in Section 3. Consequences of the proposed action should be discussed in Section 4, not Section 3, Affected Environment.

Specific Comments:

Page 1-5, Section 1.3 – The proposed Munitions and Hazardous Materials Gate should be shown on Figure 1.2. Suggest that if "East Entrance Gate" refers to the same feature it should be listed in parenthesis in the text on page 1-5.

Page 3-7 – Footnote (3) on Table 3.2 is incorrect. The Conformity Rule de-minimus thresholds apply to both non-attainment and maintenance areas and therefore do apply to Buckley AFB. The footnote should be corrected.

Page 3-7 – Table 3.2 – Regional emission inventory data for 2002 and 2003 is available from the APCD and should be used instead of 1998 data.

Page 3-8 – 3rd paragraph – Suggest deleting the phrase "effective for PM_{10} attainment areas" since this phrase is not applicable to Buckley AFB or the Denver-Aurora metropolitan area. The Denver-Aurora metro area is classified as maintenance for PM_{10}.

Page 3-8 – 4th paragraph – Suggest re-working paragraph to discuss major source status based on Title V thresholds rather than PSD thresholds. In Colorado, sources are considered major if emissions exceed 100 tons/year of any pollutant.

Page 3-9 – 2nd full paragraph – Suggest deleting entire paragraph since this is not "Affected Environment", but rather a potential consequence of the proposed action.

Page 3-12 – Section 3.4 – The discussion under Hazardous Materials should be moved to Chapter 4 since it is not "Affected Environment", but rather a potential consequence of the proposed action.

Page 3-16 – First sentence – The statement "The contractor will remove hazardous materials from the base for use at other locations" should be deleted or explained.

Page 3-17 – Section 3.6.5 Natural Gas – Gas consumption at the base appears to be grossly understated. Please confirm that the base only burned 1.3 million cubic feet of gas in FY02. Running continuously, a single small gas boiler rated at only 1 million BTU/hour can burn 8.7 million SCF of gas over the course of a year.

Page 3-24 – Table 3.7, first line (Project 7) – The wildlife listed include plant life -Buffalo Grass, Fescue, and Golden Aster, which appear to be listed here by accident.

Page 4-9 – last paragraph – The air emission calculations are located in Appendix C, not Appendix A as stated in the text.

Page 4-11 and 4-25 – Again, natural gas use on the base appears to be grossly understated. Typical office buildings have energy requirements in the range of 50,000 to 100,000 BTUs per square foot per year. Gas usage should be based on realistic heating requirements assuming that all 77,000 square feet is heated by gas for approximately one-half year. Using these assumptions, gas usage and emissions from gas combustion would be approximately 5 to 10 times higher than that reported in the EA.

Page 4-15 – It would be helpful if Table 4.6 listed all emissions that contribute to the total (construction equipment, vehicles, stationary sources, etc.). As presented, the components of the total emissions need to be pieced together from several tables scattered throughout the text and the Appendix.

Page 4-20 – A 15% increase in water usage base-wide seems fairly significant. Buckley should consider the possible use of reclaimed water for irrigation or other conservation measures.

Page 4-31 and Table 13 in Appendix C – It does not appear that emissions from construction-related vehicle trips are treated the same way as employee vehicles for child-care center operations. For example, page 4-31 states that "120 personnel contractor employee vehicles would be entering ...daily," however, Table 13 in Appendix C lists only 41,216 VMT per year (based on 260 workdays per year, this equates to only 1.32 miles per car per day). In contrast, on pages 4-12 and 4-13, the 105 employees of the Child Development Center are projected to generate 4200 VMT per day (40 miles per car per day) or 1,092,000 VMT per year. This translates into substantially different emission estimates for these two vehicle categories.

Page 4-48 – Cumulative emission impacts identified in this E.A. need to be added to the emissions from the four other recent E.A.'s to determine total impacts. Emissions from the following recently reviewed projects are conspicuously missing from this EA:

- Antenna Construction
- Fire Training Area
- Recreational Equipment Facility
- Base Housing

Section 6 – Please update the City of Aurora address for Denise Balkas, James Ives, and Mac Callison to 15151 E. Alameda Parkway, Aurora, CO 80012.

Comments on Appendix C – Air Emission Calculations

- The appendix lists a number of activities including portable crusher, concrete batch plant, milling, and asphalt batch plants for which no emissions are calculated. If these sources are not used, this should be stated in the text.
- The number of hours and emissions calculated for bulldozing, grading, and scraper operation is zero. This appears to be erroneous.
- The land disturbance table in Appendix A shows approximately 1.3 million square feet of land disturbed (about 30 acres), yet the windblown dust calculation is based on only 5 acres.

Thank you for giving the City the opportunity to respond to the draft EA and FONSI. We look forward to receiving the Final Environmental Assessment.

Sincerely,

Denise M. Balkas, A.I.C.P.
Director of Planning

DMB/jai
cc: Nancy Freed, Deputy City Manager of Operations
Jim Ives, Environmental Program Supervisor

P:\coordination projects/2004/Enviro/BAFB/comments-DraftEA-Construction II.doc

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

JUL 07 2004

Wayne E. Marusin
Deputy Commander
460 CES/CD
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Denise M. Balkas
City of Aurora
Director of Plans
15151 E. Alameda Parkway
Aurora CO 80012

Dear Ms. Balkas

Thank you for your letter dated 31 March 2004, on the Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for Proposed Construction II Projects at Buckley Air Force Base (AFB). Our responses follow:

1. General Comments - References to environmental consequences have been removed from Section 3 of the EA.

2. Page 1-5, Section 1.3 - The name of this gate was changed from the "East Entrance Gate" to the "Munitions and Hazardous Materials Gate". Figures 1.2, 2.4, 3.1, and 3.3 were revised to reflect the name change.

3. Page 3-7 - The footnote on Table 3.2 was corrected per comment.

4. Page 3-7 - Table 3.2, and other tables with identical information in Section 4, were updated using information obtained through Colorado Department of Public Heath and Environment (CDPHE) Technical Support Documents dated 2000 and 2001. Unsuccessful efforts were made to find 2002 and/or 2003 data, through communication with the CDPHE Air Pollution Control Division (APCD).

5. Page 3-8, 3rd paragraph - Phrase deleted per comment.

6. Page 3-8, 4th paragraph - Paragraph 3 on page 3-8 discusses Title V permit emission limits. However, text is added to the 4th paragraph to clarify as follows: "For CO, PM_{10}, and VOCs, Buckley AFB is a synthetic minor source under the Title V provisions because the base accepted permit limits that establish the potential to emit for these emissions at less than 100 tons per year. Buckley AFB is classified as a major source for NOx and SO_2 under Title V provisions."

7. Page 3-9, 2nd full paragraph - Paragraph deleted per comment.

8. Page 3-12, Section 3.4 - Deleted discussion on Hazardous Materials per comment. Section 4.2.2 already contained this information and revisions to capture details are not required.

9. Page 3-16, first sentence - The intent is to not allow contractors to leave excess/unused materials on-base, where they could become a waste for the Air Force to dispose of; therefore, they are expected to use all materials or remove them from the installation for use at another project. The sentence was deleted and the following sentences were added for clarification - "Contractors would not be permitted to leave any hazardous materials on base that could become wastes requiring disposal when projects are completed. All unused materials would be removed from the site by contractors at project completion."

10. Page 3-17, Section 3.6.5 - Upon review, Buckley AFB determined that natural gas usage numbers were provided in ccf versus cf, resulting in a 100-fold error. The actual 2002 annual natural gas usage should have been 134,416,700 cubic feet. The value was revised throughout the EA to reflect this change.

11. Page 3-24, Table 3.7, first line - Table was revised to read Red-tailed hawk, Black-billed Magpie, American Crow, and Starling.

12. Page 4-9, last paragraph - Corrected to reference Appendix C, per comment.

13. Pages 4-11 and 4-25 - See response to comment number 10 above. Calculations were revised with the new corrected gas use. Note: during this process an error in the original emissions calculations was discovered that overstated emissions 10-fold. For this reason the corrected emissions increased by only 10X from those originally stated (instead of 100X).

14. Page 4-15 - Table 4.6 was revised to include emissions created from construction and demolition activities, vehicle travel, and HVAC and hot water heater operation, as well as totals. A copy of the revised table is provided below:

Table 4.6 Proposed Action Air Emissions

Pollutant	Construction/ Demolition Proposed Action Annual Emissions (Tons/Year)	Vehicle Travel Proposed Action Annual Emissions (Tons/Year)	HVAC and Hot Water Proposed Action Annual Emissions (Tons/Year)	Total Proposed Action Annual Emissions (Tons/Year)	AQCR 36 Emission Inventory (Tons/Year) [1]	De minimus Values (Tons/Year) [1]	Above/ Below De minimus
CO	1.0	11.3	0.09	12.4	439,095	100	Below
VOC	2.0	0.7	0.01	2.7	185,055	100	Below
NOx	2.0	0.7	0.22	2.9	114,245	100	Below
SOx	0.3	0	0.00	0.3	65,700	100	Below
PM_{10}	27	0	0.02	27.0	25,550	100	Below

(1) CAQCC, 2000, 2001a, 2001b

15. Page 4-20 - Buckley AFB currently purchases "purple" or reclaimed, water from the city of Aurora. Added the following sentences to Section 4.2.4.1: "Buckley AFB currently purchases "purple", or reclaimed water from the City of Aurora. This water is used instead of potable water when it can be safely be substituted. Buckley will seek to use recycled purple water for appropriate applications related to construction/demolition activities and operation of completed facilities."

From: Fontanetta Anthony P 1stLt 460 CES/CEOE <Anthony.Fontanetta@BUCKLEY.AF.MIL>
To: "Frank Turina (E-mail)" <Frank_Turina@URSCORP.COM>
Date: Monday, April 05, 2004 02:02PM
Subject: FW: Environmental Assessments at BAFB

Please add to subjects EAs.

Send to Contractors Response Letter

-----Original Message-----
From: ED J LAROCK [mailto:ed.larock@state.co.us]
Sent: Friday, April 02, 2004 4:05 PM
To: anthony.fontanetta@BUCKLEY.AF.MIL; Elise.Sherva@BUCKLEY.AF.MIL
Cc: Janet.Wade@BUCKLEY.AF.MIL; Mark.Spangler@BUCKLEY.AF.MIL; Rathke.David@epamail.epa.gov; CURTIS L Burns; EDWARD H SMITH; Monica Sheets; Tom Bain
Subject: Environmental Assessments at BAFB

Lt. Fontanetta,
I am sending comments on three recently received environmental assessments at Buckley AFB. Elise requested comments go to you in her absence.

Preliminary Draft Environmental Assessment for Proposed Construction II, Buckley AFB, Colorado dated March 2004 and received March 8, 2004.

1) General - The AF ERP program is conducting a basewide preliminary assessment which may identify other environmental concerns not previously identified at the base, potentially in areas proposed for construction.

2) Section 2.1.1, Athletic Fields - The location of these proposed fields may be in areas where asbestos in soil occurs and/or stockpiles of asbestos contaminated soils exist. All removal activities in these areas should be coordinated with CDPHE as required by existing compliance orders.

3) Section 2.1.8, Demolitions, page 2-14 - Regulations pertaining to building demolition with asbestos materials are covered by the CDPHE Air Pollution Control Division (APCD). Please contact Mr. Tom Bain of the APCD at 303 692 3182 for further information on these requirements to avoid any regulatory issues.

Draft Environmental Assessment for the Proposed Antenna Construction at the Existing ADF Remote Terminal Facility, Buckley AFB, Colorado dated March 2004 and received March 9, 2004

1) General - The AF ERP program is conducting a basewide preliminary assessment which may identify other environmental concerns not previously identified at the base, potentially in areas proposed for construction.

2) Section 3.6.5, Asbestos - Concur with stated intent to coordinate this activity with the State.

3) There is no mention of the Environmental Restoration Program. The Proposed Action Location is adjacent to ERP Site 5.

- Revised value for windblown dust calculation to be 31 acres. Added footnote to appendix to indicate that for wind erosion, it was assumed that all construction projects are in progress at any one time = 31 acres. Total ground disturbance for all projects combined would be 31 acres. Although it would be unlikely for all construction and demolition projects to occur during the same year, a cumulative worst-case estimate for windblown dust emissions was made assuming that all projects are in progress during one year. This calculation yielded a PM_{10} emission estimate of 4.4 tons/year. If the emissions were spread out over several years, the windblown dust emissions for each year would be proportional to the number of acres disturbed during that year. The cumulative total PM_{10} emissions for all years would be 4.4 tons.

Please contact Ms. Elise Sherva at 720-847-9077, email elise.sherva@buckley.af.mil if you have any questions or require further information.

Sincerely,

WAYNE E. MARUSIN, GS-13, DAFC
Deputy Commander

16. Page 4-31 and Table 13 in Appendix C - Vehicle miles for the Child Development Center and Expanded Clinic were considered as wholly new miles traveled (at 40 miles per car per day). These assumptions are detailed in the text. Miles traveled for Construction Delivery and Employee Traffic is assumed to be 3.5 miles one-way. The basis for this assumption is that Deliveries and Employees would be traveling on major arteries (assumed as I-225), which is approximately 3.5 miles from entrance to Buckley AFB, and that this traffic would occur daily to job-sites elsewhere if not commuting to Buckley AFB. Therefore, to avoid double counting, and to assess only new miles traveled for work at Buckley AFB, miles traveled are assumed as 3.5 miles (one-way) to and from I-225. A footnote explaining this assumption was added to Appendix C.

17. Page 4-48 - A new table (TABLE 4.8) was added to show the emissions from the four EA's. A copy of the table is provided below:

Table 4.8 Cumulative Impact Air Emissions

Pollutant	Emissions from Antenna Construction EA (Tons/Year)[1][2]	Emissions from Fire Training Area Construction (Tons/Year)[3]	Emissions from Recreational Equipment Facility Construction EA (Tons/Year)[3]	Emissions from Housing Privatization Construction EA (Tons/Year)[4]	Emissions from Proposed Construction II EA (Tons/Year)	Total Proposed Cumulative Emissions (Tons/ Year)	De minimus Values (Tons/ Year)	AQCR 36 Emission Inventory (Tons/Year)[5]	Above/ Below De minimus
CO	2.0	0.0	0.0	21.59	12.4	36.0	100	439,095	Below
VOC	0.3	0.0	0.0	3.4	2.7	6.4	100	185,055	Below
NOX	1.30	0.0	0.1	47.58	2.9	51.9	100	114,245	Below
SOX	0.5	0.0	0.0	5.1	0.3	5.9	100	65,700	Below
PM_{10}	0.54	0.0	0.0	47.9	27.0	75.4	100	25,550	Below

(1) Buckley AFB, 2004b

(2) Buckley AFB, 2004c

(3) Buckley AFB, 2004d

(4) Buckley AFB, 2002d

(5) CAQCC, 2000, 2001a, 2001b

18. Section 6 - Addresses updated per comment.

19. Appendix C - Air Emissions Calculations

- Added text to Section 4.2.1.1 indicating that all paving and concrete materials required to complete Proposed Construction II projects are assumed to be delivered to the site. As such, it is assumed that no equipment would be brought or operated onsite (including portable stone crushers, concrete batch plants, milling and asphalt batch plants) to complete the Proposed Action.

- Revised calculation to include 5,000 tons for bulldozing and scraping. Added footnote to appendix to indicate that for bulldozing and scraping, sites are relatively flat with little to no noticeable slope. 5,000 tons of earth moving is assumed for each of these activities. Scraper miles are assumed to be 10 miles per construction/demolition project, totaling 150 miles.

4) Figure 1 displays the location of the Rocky Mountain Arsenal National
Wildlife Refuge. It is still an NPL superfund site and will not formerly become a wildlife refuge until the superfund remedy is complete. I suggest just calling it the Rocky Mountain Arsenal. Also the figure incorrectly displays the outline of Jefferson County. That is Denver County and it includes DIA. CDPHE made this exact same comment on the Environmental Assessment for the Proposed Construction of an Entomology Facility and Demolition of the Existing Entomology Facility at Buckley AFB, Colorado, in June 2003. Was that Figure ever changed?

Environmental Assessment for the Proposed Construction and Operation of a Hazardous Materials Issue Facility and a Hazardous Wastes Storage Facility dated 28 March 2004 and received March 31, 2004

1) General - The AF ERP program is conducting a basewide preliminary assessment which may identify other environmental concerns not previously identified at the base, potentially in areas proposed for construction.

2) Any asbestos encountered will need to be reported to the CDPHE for proper abatement planning.

3) The operation of the facility will be subject to RCRA regulations and inspections.

Please provide a response to these comments and let us know when and where the final documents are available. If you require this in a letter form, please contact me. Thank you for the opportunity to comment.

Ed LaRock
Hazardous Materials and Waste Management Division
Colorado Dept. of Public Health and Environment
4300 Cherry Creek Drive South
Denver, CO 80246-1530
303-692-3324
Fax 303-759-5355
ed.larock@state.co.us

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

JUL 07 2004

Wayne E. Marusin
Deputy Commander
460 CES/CD
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Ed LaRock, Environmental Protection Specialist
Colorado Department of Public Health and Environment
Hazardous Materials and Waste Management Division
4300 Cherry Creek Drive South
Denver CO 80246

Dear Mr. LaRock

Thank you for your comments, which were dated 2 April 04, on the Environmental Assessment (EA) for the Proposed Construction II, Buckley Air Force Base.

1. Section 3.1.6 of the EA has been modified to clearly identify incomplete or unavailable information per 40 CFR 1502.22. The following was added to the Section 3.1.6: "Preliminary ERP assessments are currently being conducted, which may discover other environmental concerns not previously identified at the base. These assessments may potentially identify concerns within areas proposed for construction."

2. The following statement was added Section 4.2.10: "If any asbestos containing material or subsurface asbestos containing material is located during construction, activities would be halted and the area would be evaluated. Appropriate response plans would then be developed and implemented, as necessary, per applicable laws, regulations, and compliance agreements to ensure that contamination, if present, would not be released into the environment." Section 2 was not changed since it is a description of the Proposed Action and Alternatives, while Sections 3 and Sections 4 specifically address the existing environmental conditions and the environmental consequences of the proposed actions and alternatives respectively (40 CFR 1402.14).

3. The following statement was added to Section 4.2.10: "Management of asbestos containing materials during abatement, renovation and/or demolition would be performed in accordance with all applicable regulations." In addition, we forwarded your comments to out Compliance Chief and Toxics Program Manager who are aware of the existing regulations.

If you have any further questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 720-847-9077, email elise.sherva@buckley.af.mil, or Ms. Janet Wade, Environmental Flight Chief, at 720-847-9977, email janet.wade@buckley.af.mil.

Sincerely,

WAYNE E. MARUSIN, GS-13, DAFC
Deputy Commander

STATE OF COLORADO

Bill Owens, Governor
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF WILDLIFE
AN EQUAL OPPORTUNITY EMPLOYER

Bruce McCloskey, Acting Director
6060 Broadway
Denver, Colorado 80216
Telephone: (303) 297-1192

For Wildlife-
For People

March 14, 2004

Send to (ks)

Elise Sherva
460 CES/CEV
660 S. Aspen Street, Stop 86
Buckley AFB, CO 80011-9551

RE: Draft Environmental Assessment and Draft Finding of No Significant Impact for demolition and construction and operation of multiple projects on Buckley Air Force Base.

Dear Ms. Sherva:

Thank you for the opportunity to comment on the proposed demolition and construction of multiple projects on Buckley Air Force Base (BAFB). The project would include construction of 7 new projects encompassing about 32 acres of land. The proposed projects would include construction of a Leadership Development Center, Athletic Fields, Child Development Center, Visitors Center, East Munitions Gate, Chapel, as well as additions and alterations to the existing Clinic. The proposed action also includes the demolition of 8 buildings and would encompass less than one acre of new land.

Our goal at the Colorado Division of Wildlife (CDOW) is to provide complete, consistent and timely information to all entities who request comment on matters within our statutory authority and our mission-which is to protect, preserve, enhance and manage wildlife and their environment for the use, benefit, and enjoyment of the people of Colorado and its visitors.

While we have not recently visited the site, the majority of currently undeveloped land at BAFB consists primarily of fragmented habitat surrounded by development. Noxious weeds such as thistle and knapweed have also been found in past visits. The Division would expect to find a variety of small ground-dwelling mammals, ground-nesting birds, red fox, coyotes, and passerine birds at the proposed site. These animals are capable of moving to the undisturbed habitat surrounding the proposed sites.

Currently, CDOW policy directs our efforts towards proposals that will potentially have high impacts to wildlife and wildlife habitat. The emphasis of the Division's concerns is on large acreages, critical habitats, wildlife diversity, and impacts to species of special concern, or those that are state or federally endangered. Due to the small acreage and low availability of undisturbed habitat adjacent to the proposed site, impacts of the proposed construction may be characterized as minimal.

This may not mean that the landscape has no value to wildlife or value to the community. It is important to remember that incremental and cumulative loss of natural areas and open spaces will, over time, significantly degrade the overall quality of wildlife habitat in the area.

Therefore, in this case, we want to focus our recommendations on planning and implementing your proposal to minimize negative impacts and maximize potential enhancements to support living with wildlife in our community. The Division of Wildlife recommends the following:

- If prairie dogs are present we recommend that they either be captured alive and moved to another location or humanely killed before any earth-moving occurs.

- Burrowing owls are classified as Threatened in Colorado and killing one is illegal. They live in prairie dog holes and are susceptible to being buried and killed by construction activity. We suggest a survey for the presence of burrowing owls prior to any earth-moving.

    - If construction takes place between November 1 and February 28, it is very unlikely that owls would be present since they migrate out of the state during the winter.
    - The Division suggests a burrowing owl survey prior to construction if the activity is going to take place any time between March 1 and October 31.

The spread and control of noxious weeds on the sites is a concern of the CDOW and for wildlife. The CDOW recommends implementing weed control practices that the state and/or BAFB may have in place. We suggest that any re-vegetation be performed with native trees and a mix of native grasses that will restore short-grass prairie habitat.

The Athletic fields and the lawn in them may attract wildlife. Geese, prairie dogs, rabbits, and a variety of ground-dwelling mammals may feed in the fields and prairie dogs may dig burrows along the edges.

If you have any further questions, please contact District Wildlife Manager Joe Padia at (303)291-7162.

Sincerely,

for Scott Hoover
NE Region Manager

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

Wayne E. Marusin
Deputy Commander
460 CES/CD
660 South Aspen Street, Stop 86
Buckley AFB CO 80011-9551

JUL 0 7 2004

Scott Hoover
NE Region Manager
Colorado Division of Wildlife
6060 Broadway
Denver CO 80216

Dear Mr. Hoover

Thank you for your letter dated 14 March 2004 on the Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact for demolition and construction and operation of multiple projects on Buckley Air Force Base. Our current protocols for prairie dogs and burrowing owls follow your recommended procedures. In addition, Buckley Air Force Base has a noxious weed program to control and prevent the spread of noxious weeds. We also re-vegetate with native trees and grasses where practicable.

Please contact Ms. Elise Sherva at 720-847-9077, email elise.sherva@buckley.af.mil if you have any questions or require further information.

Sincerely,

WAYNE E. MARUSIN, GS-13, DAFC
Deputy Commander

APPENDIX H

AGENCY COORDINATIOIN LETTERS

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

Eugene Jansak
Industrial Waste Specialist
Metro Wastewater Reclamation District
6450 York Street
Denver CO 80229-7499

Dear Mr. Jansak

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 303-677-9077, Email elise.sherva@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief, at 303-677-9977, Email janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

2 Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

David Rathke
U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 500
Denver CO 80202

Dear Mr Rathke

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 S Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 303-677-9077, Email elise.sherva@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief, at 303-677-9977, Email janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Jennifer Lane
U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 500
Denver CO 80202

Dear Ms. Lane

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 S Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 303-677-9077, Email elise.sherva@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief, at 303-677-9977, Email janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Eliza Moore
Wildlife Manager
Colorado Division of Wildlife
6060 South Broadway
Denver CO 80216

Dear Ms. Moore

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 S Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 303-677-9077, Email elise.sherva@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief, at 303-677-9977, Email janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

Georgianna Contiguglia
State Historic Preservation Officer
Colorado History Museum
1300 Broadway
Denver CO 80203-2137

Dear Ms Contiguglia

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition, construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The Draft EA and Draft FONSI, where Section 3 Cultural Resources information, are attached for your information, review, and comment. Section 106 consultation per the National Historic Preservation Act was initiated 21 January 2004 and the information requested for buildings 902 and 1012 will be provided under a separate cover. It is our understanding that no response from your office infers no comment with regards to the language in the attached Draft EA and Draft FONSI.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms Elise Sherva, NEPA Program Manager, at (303) 677-9077, email; elise.sherva@buckley.af.mil or Ms Janet Wade, Environmental Flight Chief, at (303) 677-9977, email; janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

2 Attachments:
Draft EA
Draft FONS

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Denise Balkas
Director of Planning
City of Aurora
15151 E. Alameda
Aurora CO 80012

Dear Ms. Balkas

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

The public comment period for this EA is 30 days. Please provide any written comments to:
Elise Sherva
460 CES/CEVP
660 S Aspen Street, Stop 86
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms. Elise Sherva, NEPA Program Manager, at 303-677-9077, Email elise.sherva@buckley.af.mil or Ms. Janet Wade, Environmental Flight Chief, at 303-677-9977, Email janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

2 Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Ed LaRock
Federal Facilities HMWM 2800
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive, South
Denver CO 80246-1530

Dear Mr. LaRock

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

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Base Civil Engineer

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460TH AIR BASE WING (AFSPC)

March 5, 2004

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460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Brad Beckman
Manager Environmental Planning
Colorado Department of Transportation
4201 East Arkansas Ave.
Denver CO 80222

Dear Mr. Beckman

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

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Base Civil Engineer

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DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

James Ives, C.E.P.
Planning, Environmental Division
City of Aurora
15151 E. Alameda
Aurora CO 80012

Dear Mr. Ives

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

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CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

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Draft EA
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DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Mac Callison
Planning, Traffic Division
City of Aurora
1470 South Havana
Aurora CO 80012

Dear Mr. Callison

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

The proposed action is required to meet the mission requirements at Buckley Air Force Base. The Draft EA and Draft FONSI are attached for your information, review, and comment.

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Elise Sherva
460 CES/CEVP
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CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

2 Attachments
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

Bruce Rosenlund
Colorado Field Supervisor
U.S. Fish and Wildlife Service
755 Parfet Street, Suite 496
Lakewood CO 80215

Dear Mr. Rosenlund

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition, construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. These facilities are needed to better support the growing military mission and accompanying family members at Buckley AFB. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations. This involves the removal and clean up of abandoned and condemned facilities.

We are submitting the Draft EA and Draft FONSI for your review, to include initiating Section 7 consultation of the Endangered Species Act. We request initiation of Section 7 Consultation. We have assessed the potential effects of the proposed project on federally listed and candidate species and determined that the proposed and/or alternative actions are not likely to adversely affect federally listed and candidate species.

Please review/provide written comments within 30 calendar days of receipt of this letter to:
Elise Sherva
460 CES/CEVP
660 South Aspen Street (Stop 86)
Buckley AFB CO 80011-9551

If you have any questions please feel free to contact Ms Elise Sherva, NEPA Program Manager, at (303) 677-9077, email; elise.sherva@buckley.af.mil or Ms Janet Wade, Environmental Flight Chief, at (303) 677-9977, email; janet.wade@buckley.af.mil.

CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

2 Attachments:
Draft EA
Draft FONSI

DEPARTMENT OF THE AIR FORCE
460TH AIR BASE WING (AFSPC)

March 5, 2004

Lt Col Christopher C. McLane
460th Civil Engineer Squadron
660 S. Aspen Street, Stop 86
Buckley AFB CO 80011-9551

Cynthia Cody
NEPA Unit Chief
U.S. Environmental Protection Agency, Region 8
999 18th Street, Suite 500
Denver CO 80202

Dear Ms. Cody

The Air Force has prepared a Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for demolition and construction and operation of multiple projects on Buckley Air Force Base. The construction projects include a Leadership Development Center, Child Development Center, Visitors Center, East Munitions Gate, Chapel, and additions and alterations to the existing Clinic. The proposed action also involves the demolition of buildings 19, 902, 1620, 1631, 1632, and former Marine Site foundations.

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CHRISTOPHER C. McLANE, Lt Col, USAF
Base Civil Engineer

Attachments
Draft EA
Draft FONSI

MACTEC

March 5, 2004

Denver Public Library
Government Document Section
10 West Fourteenth Ave
Denver, CO 80204

The Air Force has prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for Proposed Construction II Projects (including seven construction and eight demolition projects) at Buckley Air Force Base (AFB). The proposed action is required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

A copy of the Draft EA and FONSI for the Proposed Construction II Projects is enclosed for public review. Written comments can be directed to:

Elise Sherva
460 CES/CEVP
660 South Aspen Street, Stop 86
Buckley AFB, CO 80011-9551.

Questions can be directed to Ms. Elise Sherva at 303-677-9077 or Ms. Janet Wade at 303-677-9977.

Sincerely,

Eric J. Barndt
Project Manager (under contract to 460 CDS/CEV)

MACTEC Engineering and Consulting, Inc.
1627 Cole Boulevard
Golden, CO 80401
303-292-5365 • Fax: 303-292-5411

MACTEC

March 5, 2004

Aurora Public Library
Government Document Section
14949 East Alameda Street
Aurora, CO 80012

The Air Force has prepared a Draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for Proposed Construction II Projects (including seven construction and eight demolition projects) at Buckley Air Force Base (AFB). The proposed action is required to support the 460th Air Base Wing mission and improve quality of life for on-site, off-site, and retired personnel.

A copy of the Draft EA and FONSI for the Proposed Construction II Projects is enclosed for public review. Written comments can be directed to:

Elise Sherva
460 CES/CEVP
660 South Aspen Street, Stop 86
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Sincerely,

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Project Manager (under contract to 460 CDS/CEV)

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1627 Cole Boulevard
Golden, CO 80401
303-292-5365 • Fax: 303-292-5411

APPENDIX I

NOTICE OF AVAILABILITY

THE Denver Newspaper Agency
DENVER, CO

PUBLISHER'S AFFIDAVIT

City and County of Denver,
STATE OF COLORADO, SS.

Diane Trujillo

..... being of lawful age and being first duly sworn upon oath, deposes and says:

Legal Advertising Reviewer

That he/she is the .....

Of The Denver Newspaper Agency, publisher of the Denver Post and Rocky Mountain News, daily newspapers of general Circulation published and printed in whole or in part in Denver, in the County of Denver and State of Colorado, and that said newspaper was Prior to and during all the time hereinafter mentioned duly qualified For the publication of legal notices and advertisements within the Meaning of an Act of the General Assembly of the State of Colorado,
Approved April 7, 1921, as amended and approved March 30, 1923;
And as amended and approved March 5, 1935, entitled "An Act Concerning Legal Notices, Advertisements and Publications and the Fees of printers and publishers thereof, and to repeal all acts and parts Of acts in conflict with the provision of this Act" and amendments Thereto:

That the notice, of which the annexed is a true copy, was published in The said newspaper to wit: (dates of publication)

March 7, 2004

.....

.....

Diane Trujillo

Signature

Subscribed and sworn to before me this 10 day

Of MAY A.D. 2004.

Susan Sloan

Notary Public.

My commission expires 8/15/06

SUSAN SLOAN NOTARY PUBLIC STATE OF COLORADO

Public Notice
U.S. Air Force Notice of Availability

Draft Environmental Assessment (EA) and Draft Finding of No Significant Impact (FONSI) for proposed ear (FY) 2004 (04) and 2005 (05) construction and demolition projects (hereafter called Proposed Construction II) at Buckley Air Force Base. The United States Air Force (USAF) has prepared this EA to evaluate the potential environmental impacts from the construction and operation of the Proposed Construction II projects at Buckley Air Force Base (Proposed Action). The EA has been prepared per the National Environmental Policy Act to analyze the potential environmental consequences of the Proposed Action. The Proposed Construction II projects are required to support and sustain the realignment of Buckley Air National Guard Base to Buckley Air Force Base.

Comments must be received by April 7, 2004.

Copies of the respective EA and FONSI may be found at the following public libraries: Aurora Public Library, Government Document section, 14949 East Alameda Drive, Aurora, CO 80012, 303-739-6600 or Denver Public Library, Government Document section, 10 West Fourteenth Ave., Denver, CO 80204, 303-640-6200. Interested parties should address their comments, questions, or concerns to: Chief, Environmental Management, 460 CES/CEV, 660 South Aspen Street, Mail Stop 86, Buckley AFB, Colorado, CO 80011-9551, 303-677-9402.